EFFECTIVENESS OF SALT SOLUTION WASH VERSUS WARM WATER WASH ON SELECTED SYMPTOM OF LEUCORRHEA AMONG POST MENOPAUSAL WOMEN IN SELECTED COMMUNITIES, KANYAKUMARI DISTRICT

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CERTIFICATE

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(SHIRLEY ANGEL. J)

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ABSTRACT

A study was conducted to compare the effectiveness of salt solution wash versus warm water wash on selected symptom of leucorrhea among post menopausal women in selected communities, Kanyakumari District.

A Quasi Experimental design was adopted and the study was conducted at Ganesapuram and Kottaram, Nagercoil. Thirty postmenopausal women were selected under Study group I for salt solution wash and 30 postmenopausal women in Study group II for warm water wash. Standardised Numerical itching assessment scale was used to assess the level of selected symptom of leucorrhea. Pre test was done on first day by providing salt solution wash in Study group I and warm water wash in Study group II and post test was done after three days of consecutive perineal wash .

The demographic variables in Study group I, 10 (33.4%) of them belonged to 45-50 years of age and 5 (16.7%) of them belonged to 61-65 years of age. As per their education 7(23.4%) of them had primary education and 11 (36.7%) of them were post graduate. According to their occupation 7 (23.4%) of them were private workers and 7 (23.4%) of them were other workers. Distribution of postmenopausal women according to their religion 8 (26.7%) of them were Hindus and 6 (20%) of them were Muslims .

The demographic variable in Study group II, 12 (40%) of them belonged to 45-50 years of age and 2 (6.7%) of them belonged to 61-65 years of age. According to their education 9 (30%) of them had primary education and 5 (16.7%) of them were post graduate. According to their occupation 10 (33.4%) of them were private workers and 1 (3.4%) of them were other workers. Distribution of post menopausal women according to their religion 9 (30%) of them were Hindus and 4 (13.4%) of them were Muslims.

During pre test both Study group I and Study group II 30 (100%) had symptom of leucorrhea. During post test, in Study group I, 28 (93.4 %) had mild leucorrhea, 2 (6.7 %) had moderate leucorrhea. In Study group II, 10 (33.4%) had mild leucorrhea, 20 (66.7%) had moderate leucorrhea.

In Study group I the pre test mean was 5.96, the post test mean was 1.96, the calculated ‘t’ value was 14.310, so there was significant difference in the pre test and post test scores of level of selected symptom of leucorrhea. Similarly in Study group II the pre test mean was 5.93, the post test mean was 4.23, the calculated ‘t’ value was 1.2691, so there was significant difference in the pre test and post test scores of level of selected symptom of leucorrhea.

In post test, mean score of level of selected symptom of leucorrhea of the Study group I was 1.966 and the mean score of the Study group II was 4.233. There was significant difference between the Study group I and Study group II computed through independent ‘t’ test. (t=1.699). The score represents the effectiveness of salt water wash is more effective than the warm water wash. Researcher concluded as per the study that the symptom of leucorrhea can be reduced by using salt solution wash which is cost effective and best method than warm water wash. This study statistically proved the effectiveness of salt solution wash on level of selected symptom of leucorrhea was effective than warm water wash.

CHAPTER-I

INTRODUCTION

Health is not mainly an issue of doctors, social services and hospitals. It is an issue of social justice. Health is a common theme in most cultures. In fact, all communities have their concepts of health, as part of their culture. Health is the level of functional or metabolic efficiency of a living organism. In humans, it is the general condition of a person's mind and body, usually meaning to be free from illness, injury or pain.

Women's health is an issue which has been taken up by many feminists, especially where reproductive health is concerned. Women's health is positioned within a wider body of knowledge cited by, amongst others, the World Health Organization, which places importance on gender as a social determinant of health.

Among the people the health of women requires high attention. Women are probably dying because she has been denied access to medical treatment in time. Women's health is changing practically every step in time. From womb to tomb, women are made to pay dearly for their women hood and unless some steps are taken to make people appreciate human rights issues related to women's sexual and reproductive health, women will continue to die.

There are several medical disorders from which women suffer and leucorrhoea is one of them. Leucorrhoea (common wealth) or leucorrhoea (US) is actually a medical term that denotes a thick, whitish vaginal discharge. It is a natural defense mechanism that the vagina uses to maintain its chemical balance, as well as preserve the flexibility of vaginal tissue.

According to the statistics from the Ministry of Health, nearly 90% women get gynaecological disease. This rate increases from 15% to 27% each year. It is noticeable that not only married women but also young women who have never had sex are no exception to this disease.

Normally, the secretion is just enough to lubricate vagina and the sources of secretion are mainly the endometrial glands, cervical glands and vaginal transudate as the vagina has no secretary glands to produce a secretion of its own.

The old medical literature have been repleted with instances of ‘vaginal whites’, which term is applied to excessive vaginal discharge from pus and blood. It may also result from the inflammation or congestion of the vaginal mucosa. In cases where it is yellowish or gives offensive odour, a doctor should be get consulted since it could be sign of an STD.

A variety of local terms across India exist for leucorrhoea symptom. In north-central India, it is called safed panni (white water), dhatu or swed pradhar. Women complaining of safed panni often also complained of vague somatic symptoms that include burning hands and feet, dizziness, backache and weakness. Women were very concerned about their condition, and would say that when safed panni is lost from the body, progressive weakness will develop. Many women felt that undergoing the tubectomy operation had caused the condition; others feel that diet was at fault.

The majority of women complaining of vaginal discharge had little clinical evidence of infection. Even the discharge of which they complained seemed no more than normal physiological discharge, or the mildly increased discharge associated with overgrowth of naturally occurring vaginal organisms. The treatment of leucorrhoea is both by oral and vaginal routes. The vaginal route requires privacy and professional supervision. The most important drawback of the vaginal route is that the medicine do not spread evenly over the vaginal cervices and surfaces thus leaving some hidden infection which results in recurrence after a variable period of time.

After the menopause the lack of ovarian secretion leads to, a partial atrophy of the vaginal epithelium, which together with lack of acidity at this time may allow infection to, occur. A thin watery discharge results which may be blood stained, and the vagina shows a widespread punctate red.

Leucorrhoea usually shows symptoms in association with other illness. Wide varieties of reasons are encountered in its causation. Commonly fungal, parasitic, bacterial and sexually transmitted diseases are the prime causative factors.

Most secretions are regarding life style physiological and warrant no medical interventions. But it is significant if it is blood stained, profuse, foul smelling or with changes in its colour. Usually the normal secretions are slimy and slightly sticky. It is something like nasal secretion. Normally the quantity of vaginal secretions varies

throughout the menstrual cycle, peaking at ovulation and also increasing when under emotional stress.

BACKGROUND OF THE STUDY

Women's health is considered to be the back bone of the society. There is a growing recognition that the gynaecological morbidity is an important health issue among all women in India. Gynecological morbidity in women can range from life threatening diseases such as malignancies to debilitating and psychologically distressing problems like leucorrhea .

Abnormal vaginal discharge is a frequent complaint of women seen in the gynecologic clinic. The discharge may range from what is called as excess of normal to one which is a part of wide spectrum of ailments. Excessive vaginal discharge in the reproductive age group is the most common complaint encountered every day both by gynecologists and general practitioners. Leucorrhea is one of the most common causes of referral to primary care or gynecology clinics. It is seen especially in reproductive ages, sexually active women and those with poor genital hygiene.

Leucorrhea is strictly defined as an excessive vaginal discharge. The symptom of excessive vaginal discharge is a subjective one with the individual variation, while to declare it to be normal and not an infective one requires clinical and laboratory investigations.

Usually the woman notices a thick, curdy-white discharge. They could also notice a thinner, milkier-white discharge. Moderate to severe itching is present. The labia and vulva may be swollen and red. The skin may be sensitive to touch and the women may experience coition to be severely painful.

Leucorrhea occurs in 1-14% of all the women in the reproductive age group and is responsible for 5-10 million OPD visits per year throughout the world. The prevalence of excessive vaginal discharge in India is estimated to be 30%.

Adult females presenting with genital complaints were recruited from clinics in Karnataka state, south India. The study included 412 female participants. A questionnaire was administered, physical examination performed, and blood samples were collected for herpes simplex virus-type 2 (HSV-2) and syphilis serology.

Women with vaginal discharge were tested for Neisseria gonorrhoeae (NG), Chlamydia trachomatis (CT) and Trichomonasvaginalis (TV). Vaginal swabs were also tested for bacterial vaginosis and yeast infection. Participants with genital ulcers were tested for Treponemapallidum (TP), Haemophilusducreyi (HD), and HSV-2, human immunodeficiency virus (HIV) testing was offered to all individuals.

The results showed that the rates of HIV infection were high (women, 15%). Herpes simplex virus-2 was significantly associated with HIV in women. Very little Neisseria gonorrhoeae or Chlamydia trachomatis was detected among women with vaginal discharge. However, bacterial vaginosis was identified in approximately 40% of women, with significant amounts of Trichomonas vaginalis and Candida also was detected. Herpes simplex virus-type 2 was the most commonly identified pathogen among participants with genital ulcer disease, and the clinical distinction of herpetic versus non-herpetic lesions was not helpful.

SIGNIFICANCE AND NEED FOR THE STUDY

The excessive vaginal secretions may be due to the physiological excess when the oestrogen levels become high in conditions like during puberty, around ovulation stage of the menstural cycle, during premenstrual stage, during pregnancy & during sexual excitement.

Abnormal vaginal discharge also predisposes to significant morbidity. Non infective cervical lesion may produce excessive secretion which pours out at the vulva. Such lesions are cervical ectopy, chronic cervicitis, mucous polyp and ectropion (cervical glands are exposed to the vagina). The vaginal causes are uterine prolapse, acquired retroverteduterus, chronic pelvic inflammation, 'pill' use and vaginal adenosis. Ill health is one of the important causes of excessive vaginal discharge. It produces excess exfoliation of the superficial cells.

The health care seeking behaviour for Reproductive Tract Infection presents a classic case of neglect and associated suffering. Non-availability of appropriate treatment or heavy dependence on indigenous medicines which are not scientifically validated further aggravates the problem. The treatment is delayed for an average of 3 to 4 months before a woman is able to identify the symptoms as abnormal (vaginal discharges are invariably taken as part of life). Only if the symptoms persist or get

aggravated further, home remedies are attempted. Most women claimed that they knew a great deal about home remedies for gynaecological disorders and initially preferred those remedies to treatment from a doctor. Moreover, in every neighbourhood, there are a number of elderly women who are self-proclaimed experts in indigenous treatment for gynaecological morbidity and dispense treatment to everybody who seeks their advice. In the first instance, most women consult them for treatment of their Reproductive tract infections. Only when the problem becomes too acute, professional help is sought. However, even then, first of all, the village health worker or a non-qualified private medical practitioner in the village is consulted. Services of a hospital or a qualified doctor are sought only when the problem becomes very acute.

And especially women living in the rural settings feel embarrassed to seek medical advice for such issues. Salt solution wash and Warm water wash are few of the home remedies which women can perform and be relieved of the debilitating symptoms of leucorrhea like itching. It is easily available and a cost effective measure that a women can perform at home itself. Hence the researcher felt the need of doing this study to find out the effectiveness of salt solution wash and warm water wash on leucorrhea among post menopausal women with the complaints of itching, burning and soreness.

STATEMENT OF PROBLEM

A Quasi Experimental study to compare the effectiveness of salt solution wash versus warm water wash on selected symptom of Leucorrhea among post menopausal women in selected community, Kanyakumari district.

OBJECTIVES OF STUDY

- To assess and compare the pre and post test level of selected symptom of leucorrhea among post menopausal women in Study group I and Study group II.
- To evaluate the effectiveness of salt solution wash and warm water wash on selected symptom of leucorrhea among post menopausal women in Study group I and Study group II.

- To compare the effectiveness of salt solution wash and warm water wash on selected symptom of leucorrhea among post menopausal women in study group I and study group II.
- To associate the post test level of selected symptom of leucorrhea on postmenopausal women with the selected demographic variables in Study group I and Study group II.

HYPOTHESES

H_1-There will be significant difference between the pre and post test level of selected symptom of leucorrhea among post menopausal women in Study group I and Study group II.

H_2-There will be significant difference between the post test score of salt solution wash and warm water wash on level of selected symptom of leucorrhea among post menopausal women in Study group I and Study group II.

H_3-There will be significant association between the post test level of selected symptom of leucorrhea with selected demographic variables in Study group I and Study group II.

ASSUMPTION

1. Middle age women may have leucorrhea after their menopause.
2. The postmenopausal women with leucorrhea will experience reduce of symptom after salt solution wash.

OPERATIONAL DEFINITION

1. **Evaluate**

Evaluation refers to the identification of difference between the pretest and post test level of selected symptom of leucorrhea and judging the effectiveness of salt solution wash among post menopausal women.

2. **Effectiveness**

Effectiveness is the significant reduction in level of selected symptom of leucorrhea among postmenopausal women with salt solution wash in Study group I and warm water wash in Study group II.

3. **Salt solution wash**

It refers to a solution which is made by adding two table spoons of salt to 500ml of water (approximately to 2 handfuls of common or table salt in 1/2 litre of water) at 45-50°C then made warm up to 38°C as measured by using lotion thermometer . (Annexure X)

4. **Warm water wash**

It refers to a solution which is made by one litre of water which is boiled up to 45-50°C and then made warm up to 38°C as measured by using lotion thermometer. (Annexure X)

5**. Leucorrhea**

It refers to excess white vaginal discharge and vaginal itching in the postmenopausal women as measured by Symptom checklist and Numerical itching assessment scale.

6. **Post menopausal women**

It refers to women who have cessation of menstrual cycle more than one year.

DELIMITATIONS

- The delimitation of the study are as follows:-
    - Intervention given only for four weeks.
    - Post menopausal women who are particularly in selected community , Nagercoil .

CONCEPTUAL FRAMEWORK

Imogene M. King was born in 1923, the youngest of three children. She received her basic nursing education from St. John's Hospital School of Nursing in St. Louis, Missouri, in 1946. She did her BS in nursing education in 1948 and MS in nursing in 1958 from St. Louis university and her Ed (1961) is from Teachers College, Columbia University, New York. She has done postdoctoral study in research design, statistics, and computers.

The purposes of the conceptual framework are to organize concepts that represent essential knowledge that might be used by many disciplines and construct theories from the framework and test them from the perspective of nursing as a discipline. It includes goal, structure, function, resources, and decision making, which King says are essential elements. The framework has health as the goal for nursing.

King's theory of goal attainment

The researcher adopts Modified Imogene King's Goal Attainment Theory (1981) based on the personal & interpersonal systems including interaction, perception, judgement, communication and transaction.

The researcher adopted goal attainment as a basic theory for conceptual framework, which is aimed at effectiveness of salt solution wash and warm warm wash on level of selected symptom of leucorrhea. This involves interaction between the researcher and the post menopausal women.

The major elements of the theory of goal attainment are seen "in the interpersonal systems in which two people, who are usually strangers, come together in a health care organization to help and to be helped to maintain a state of health that permits functioning in roles". The concepts of the theory are as follows.

Six major concepts describe these phenomena

Perception

It refers to people representation of reality. Here the researcher and the post menopausal women perceived the need of salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea.

Judgment

Judgment is decision which is made. Here the researcher decides to provide salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea and post menopausal women who are living in Ganesapuram and Kottaram community decided to participate in the research study.

Action

This refers to the changes that have to be achieved. The researcher action is to provide salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea and post menopausal women decided to receive the salt solution wash and warm water wash.

Reaction

Reaction helps in setting a mutual goal. In this study the researcher and post menopausal women set a mutual goal. Here the mutual goal is reduction in level of selected symptom of leucorrhea.

Interaction

If refers to the verbal and non verbal communication between one individual or between two or more individual who involve goal directed perception. Here the researcher encourages the post menopausal women in the selected community to receive the salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea.

Transaction

This is the achievement of a goal. Here the researcher's goal is achievement of reduction in the symptom of leucorrhea and evaluate the effectiveness of salt solution wash versus warm water wash by using Numerical itching assessment scale.

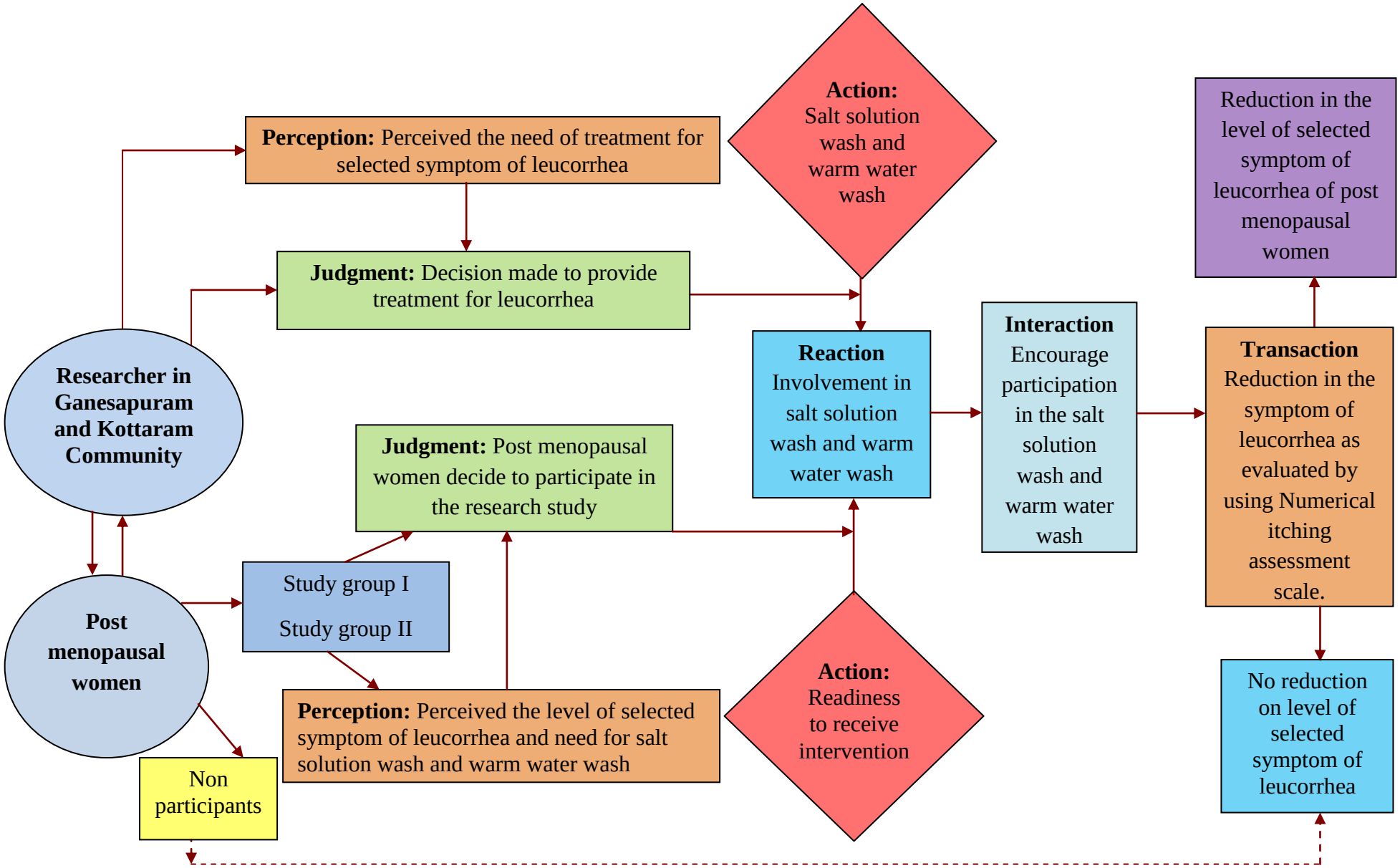


Fig.1.1. Conceptual Frame Work Based on Modified Imogene King's Goal Attainment Theory (1981)

CHAPTER-II

REVIEW OF LITERATURE

This chapter is designed to include the review of literature. The review of literature entails the systematic identification, reflection, criteria analysis and reporting of existing information in relation to the problem.

The review of literature presented in this chapter is organised systematically. The literature review is divided into three topics

Section -A: Literature related to prevalence of leucorrhea.

Section -B: Literature related to morbidities associated with leucorrhea

Section -C: Literature related to the effectiveness of salt solution.

LITERATURE RELATED TO PREVALENCE OF LEUCORRHEA

De Seta F and Restaino S (2012) conducted a prospective comparative study on 60 asymptomatic women who voluntarily requested Combined Oral Contraception (COC) or Combined Contraceptive Vaginal Ring (CCVR group). For each woman, examination of vaginal pH; quantification of leukocytes, lactobacilli, Candida and cocci on saline microscopy fluid; Gram stain with Nugent score and the presence of vaginal infection [culture for Trichomonas vaginalis, albicans and nonalbicans Candida, Group B Streptococcus (GBS)]. There was an increase of lactobacilli in the CCVR users and an increase of GBS in COC users. It means that an increase of leukorrhea in both groups could be protective in terms of prevention of vaginal imbalance/infection.

Panahi Y (2011) conducted a cross-sectional study among Ghumantoo nomadic tribes of Rajasthan state in India to study the prevalence rate of various diseases. The study involved about 1286 participants. Information regarding various diseases among the study population was obtained through questionnaires. Results showed that the prevalence of Allergies, Asthma and Leucorrhea were maximum among them.

Varsha Chaudhary and Rajeev Kumar (2010) conducted a cross sectional study in tertiary care hospital of Bareilly district. The respondent were the female in reproductive age group (15-49yrs) attending Obstetrics & Gynaecological Opd. Sample size of 590 was calculated, for sample to be more representative of population, a total of 1100 female in reproductive age group were included in the study. Odds ratio (OR) and their 95% Confidence Interval (CI) were calculated to estimate the strength of association between vaginal discharge and other gynaecological symptoms. Chi square test was applied as test of significance for data analysis.

Fadel A sharifa (2009) conducted a survey on three villages of Haryana & Panchkula among married women to ascertain the views of the respondents regarding excessive vaginal discharge. The study included 236 participants from 15-45 years old . These women were also interviewed by a female social worker on various aspects of excessive vaginal discharge. Results showed that the prevalence of excessive vaginal discharge was 28.7%. Weakness, backache and poor vision were reported as the main health effects of vaginal discharge. Heat, melting of bones, sexual promiscuity, poor hygiene and diet were told as the major causes of vaginal discharge. Consultation rate for vaginal discharge was 59%.

Shawn P huelsm (2009) conducted a community based cross-sectional study on reproductive age group women in an urban community of Nagpur, to assess the prevalence of leucorrhoea and the factors influencing the same in these women. The study participants included 506 females, out of which 149 were unmarried and 357 were married. Detailed history and clinical examination was done in all the females including gynecological examination in all the married females. Leucorrhoea was present in 139 (27.47%) females. Leucorrhoea was found significantly more in married females as compared to unmarried ($p < 0.001$), more in pregnant women as compared to non-pregnant women and women of lower socioeconomic status ($p < 0.001$), women with high parity ($p < 0.001$). Use of Copper-T was not associated with Leucorrhoea ($p > 0.05$).

Nitesh Kumar and Rajaram Choyal (2007) conducted a study on Hamirpur district, the smallest district of Himachal Pradesh. The 27 medicinal plants belonging to 18 families were reported which are used to cure Leucorrhoea and other

gynecological problems. Assimile, Cissampelos pareira, Dalbergia sisso, Emblica officinalis, Jugan regia, Raphanus sativus, Sarca indica, Smiles aspara, Terminalia chebula, Tinospora cordifolia, Woodfordia fruticosa, Xanthium strumarium are the plant species which are mainly used by the local people of study area for the treatment of Leucorrhoea and Menorrhagia.

Ghotbi Sh and Beheshtim (2006) conducted a descriptive cross sectional study performed in Faternia clinic among women. A total of 1252 patients with average age of 15-53 years was included. A questionnaire in addition to history and physical was completed for included cases. Microbial vaginal discharge in sexually active women is less common in those who use condom for contraception and causes in order of prevalence are gram positive cocci, candida, Trichomoniasis, Gardenella vaginalis and Gonorrhea was successfully detected.

LITERATURE RELATED TO MORBIDITIES ASSOCIATED WITH LEUCORRHEA

Lazenby GB and Soper DE (2014) conducted a study on Trichomonas vaginalis, a common sexually transmitted infection (STI) causing vaginitis. Two hundred ninety-four women were enrolled, and 16% were found to have Trichomonas (46/294). Trichomonas infection was more common in parous non-Hispanic, black women, who reported low rates of contraceptive use (33% versus 17%; P = 0.02) and a STI history (85% versus 55%; P = 0.002). These women were more likely to report vaginal discharge (76% versus 59%; P = 0.02) and have an elevated vaginal pH (87% versus 48%; P < 0.001) and gonorrhea infection (15% versus 4%; P = 0.002). Patients with leukorrhea should be evaluated with more-sensitive tests for T. vaginalis, preferably NAATs, if microscopy is negative.

Savini.V and Marrollo (2013) conducted a study on streptococcus agalactiae (group B Streptococcus, GBS) on vaginal pathogenicity. In women, genital itching and burning, along with leukorrhea are commonly and almost exclusively referred to bacterial vaginosis, candidiasis and trichomoniasis. GBS virulence for vagina was recognized in the past, as the organism has been observed to potentially cause local inflammation and discharge, as well as lactobacilli rarefaction. A nonhemolytic (γ-hemolytic) GBS strain was found to be the etiologic agent of vaginal infection. Uncommon S. agalactiae phenotypes are hard to be recognized and may be therefore

responsible for misdiagnosing and underestimation of GBS vaginitis prevalence; the support of the Liofilchem Chromatic StreptoB medium, that successfully detected such an atypical variant.

Somia Gul and Hina Qamar (2013) conducted a study to examine the presenting primary complaint of vaginal discharge is normal or infectious in women of karachi at clinics, hospitals, colleges and other different public places. Survey was scrutinized using common language of General Health Questionnaire and general Interviews. (sample size n=200 and age group=14-40). Primary complaint of vaginal discharge is due to extreme fatigue, not performing healthy lifestyle (eating disorder, never exercise, sleeplessness), a marker of poverty, and low social integration.

Facchinetti F and Dante G (2012) conducted a study to compare the effects of a dietary supplementation with oral probiotic, and the treatment with vaginal clindamycin in pregnant women with bacterial vaginosis. Fourty pregnant women, with a diagnosis of bacterial vaginosis according to the Amsel criteria, were enrolled between the 10th and the 34th week of gestation. Patients in the group A were treated with probiotic orally (VSL3® Ferring), 2 tablets a day for 5 days, followed by 1 tablet daily for 10 days. Patients in group B were treated with vaginal clindamycin 100 mg daily for 15 days. After treatment the vaginal discharge was completely absent in group A, and reduced in group B. The itching occurred only in 10% of patients in each of the two groups. The improvement of constipation occurs only in the group A (P=0.002). The oral treatment with VSL#3® is effective in the treatment of VB in pregnant women as a topical treatment with clindamycin.

Gene B bishop (2011) conducted a community-based survey of 3000 women aged 18–50 years was done in Goa, India to investigate the risk factors of the complaint of excessive vaginal discharge. Women who gave informed consent were invited to participate in a structured interview. Results revealed that of the 2494 women (83%) who agreed to participate, 14.5% complained of having an abnormal vaginal discharge. Stress was the most common causal attribution for the complaint.

Atta U baham (2010) conducted a 7-month prospective descriptive study on the gynaecology department of Cocody University Hospital and in the department of sexually-transmitted infections of the Pasteur Institute of Côte d'Ivoire from October 2003 through April 2004 to determine the frequency of different bacteria causing infectious leucorrhoea and to calculate the percentage of cures after standard

treatment. The most frequent bacteria discovered in the study were: Gardnerellavaginalis (47%), Candida albicans (29.4%), Chlamydia trachomatis (13.7%), Trichomonasvaginalis (6.9%), and Neisseria gonorrhoeae (2.9%). The overall cure rate was 87%. Treatment failure was most common for C. trachomatis (8 of 14 cases, 57.1%), N. gonorrhoeae (1 of 3 cases) and T. vaginalis (2 of 7 cases, 28.6%). Treatment was 100% effective for G. vaginalis and C. albicans. The fight against sexually-transmitted infections should be intensified.

Belviq (2008) conducted a cross sectional study among 83,000 women in the child bearing age in Boston, USA to assess the risk factors for leucorrhea. The results showed that 17% of the sample reported to have leucorrhea, 25% of the total sample were identified to have sexually transmitted disease, 12% of the sample were suffering from bacterial infections .Another finding of the study revealed that 50% of the sample were diagnosed to have anaemia, 20% of the samples were in the menopausal period.

Atia tul waha (2007) conducted a study in gynaecological out-patient department of Pakistan Railway Hospital, Rawalpindi, Pakistan among 100 women of reproductive age group with the complaint of vaginal discharge to evaluate the common organisms causing vaginal discharge. After filling the proforma, patients were examined by speculum examination and two high vaginal swabs (HVS) were collected aseptically from each patient. One swab was used for making wet mount for clue cells, pus cells and for motility of Trichomonas vaginalis. The other swab was used to check pH and Amine test. The growth was confirmed by Gram staining in each case. Results of the study revealed that Gardnerrella vaginalis was isolated in 28%, Group B streptococcus in 5% and T. vaginolis in 4% of women. The study concluded that Gardnerella vaginalis causing Bacterial Vaginosis is the most common cause of vaginal discharge in otherwise healthy women of reproductive age group.

S. Poornima and S.M. Katti (2007) conducted a community based cross sectional study at Khasbag, Belgaum city. 400 married women were interviewed using a pre-tested, pre-designed, semi structured questionnaire. The participants were subjected to medical examination by a qualified gynecologist and subjected to lab investigations as required. 282 (70.50 %) women had reproductivetract infections, 83 (20.75%) had menstrual problems, 108 (27.00%) had UTIs, 97 (24.25 %) had chronic

and 77(19.25%) had acute pelvic inflammatory disease. The total prevalence of gynecological problems per woman was 1.51. There was no significant association of prevalence of gynecological problems and the age, education and socio-economic status. The over all treatment seeking behavior was 15.72%. Treatment seeking was highest for conceiving difficulty (48.14 %) and least for RTIs (9.57 %). There is high prevalence of gynecological problems among the urban married women of Belgaum city.

Akusha (2005) conducted a study to assess the prevalence of gonococcal infection in cases of Leucorrhoea in the gynaecological outpatient department of K.E.M public hospital. A total of 2514 patients were examined. Patients with normal urogenital tract and no evidence of Leucorrhoea were excluded from the study. Detailed history about their obstetric status, menstrual periods and other associated complaints was recorded. History, of exposure to venereal disease in the patient and/or in her husband was asked for. Any treatment taken in the past, especially for venereal diseases, was enquired.

Venkatalakshmi (2002) conducted a study involved the detection of gonococcal infection from the cervical and urethral swabs of the patients, together with urethral swabs from their husbands. The results of the study revealed that 125 cases (5.12%) were found to have some evidence of leucorrhoea. In 19 of these 125 cases, cultures and or smears were positive for gonococci, giving an overall prevalence of 0.7 %.

LITERATURE RELATED TO THE EFFECTIVENESS OF SALT SOLUTION

Salt solution has an antiseptic action. Many microorganisms cannot live in an overly salty environment as water is drawn out of their cells by osmosis. This property of salt can be used to reduce the growth of micro organisms.

Mincy.M.L. (2010) conducted a experimental study in a hospital, Kerala. To assess the effectiveness of salt solution wash for leucorrhea among 30 married women. The findings revealed that there was a significant reduction in leucorrhea after perineal wash with salt solution. $t=34.47$ ($p<0.01$) among married women in the Experimental group.

Meenakumari (2008) conducted a experimental study among 60 women of Omayalchi CHC Arrakkampakkam, Chennai to assess the effectiveness of lukewarm water in the home management of abnormal vaginal discharge. The findings revealed that women in the Experimental group showed a highly significant decrease in the level of itching, burning pain abdominal pain, back ache following administration of luke warm water with clients in the Control group.

Steinhandler (2006) conducted a cross-sectional study of 598 non-pregnant patients undergoing a saline wet preparation and microbiologic testing for C.trachomatis and N. gonorrhea were eligible. Providers prospectively collected data from saline microscopic analysis. Bacterial vaginosis was documented based on Amsel's criteria, and ligase chain reaction testing of the endo-cervix was performed for C. trachomatis and N. gonorrhea.

CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with research approach, research design, variables, setting, population, sample, sample size, sampling technique, criteria for sample selection, description of the tool, content validity, reliability of the tool, pilot study report, data collection procedure, data analysis and protection of human rights.

Research approach

Researcher used Quantitative approach for this study.

Research design

A Quasi Experimental, comparison between subject design was used for this study.

The diagrammatic representation of this study is as follows:

R E1 O1 X1 O2

R E2 O1 X2 O2

(R: Random selection, X: Manipulation, O: Observation)

E1 - Study group I

E2- Study group II

O1- Leucorrhea assessment on first day

O2-Leucorrhea assessment on three days after wash

X1- Perineal wash with salt solution

X2- Perineal wash with warm water

Variables

Independent variables: Salt solution wash and warm water wash.

Dependent variable **:** level of selected symptom of leucorrhea.

Setting

The study was conducted at Ganesapuram, Kottaram Nagercoil which is located in Kanyakumari district. Ganesapuram is 5 kilometres and Kottaram 25 kilometres away from the St. Xavier's Catholic College of Nursing, Chunkankadai, Nagercoil. There are totally 360 houses in Ganesapuram and 690 houses in Kottaram. Primary Health Centres are available in both the communities. Ganesapuram is a urban community and Kottaram is a rural community.

Population

Target population

Post menopausal women with selected symptom of leucorrhea.

Accessible population

Post menopausal women with selected symptom of leucorrhea from Ganesapuram and kottaram in Nagercoil.

Sample

Selected post menopausal women who fulfilled the inclusion criteria and were available in Ganesapuram and kottaram.

Sample size

Thirty post menopausal women were in Study group I and 30 post menopausal women were in Study group II.

Sampling technique

All post menopausal women who fulfilled the inclusion criteria were selected by using Purposive sampling technique.

Criteria for sample selection

Inclusion criteria

- The post menopausal women who were in the age of 45-65 years.
- The post menopausal women identified to have leucorrhea (mild, moderate and severe).

Exclusion criteria

- The post menopausal women who were not able to take salt solution wash and warm water wash.
- The post menopausal women who were not available at the time of data collection.
- The post menopausal women who were not willing for the study.
- The post menopausal women with chronic medical or surgical condition such as STD's and vaginal surgeries.

Description of tool

Part I

Structured questionnaire to collect the demographic variables consist of age, education, occupation and religion. **(ANNEXURE VII)**

Part II

The Numerical itching assessment scale for assessing the level of selected symptom of leucorrhea. (**ANNEXURE VII)** The total score was 10. The resulting score was arranged as follows:

1 -3	Mild itching
4-7	Moderate itching
8-10	Severe itching

Content validity of the tool

The content was validated by 3 experts in the field of obstetrics and gynaecological nursing and 2 medical experts from obstetrics and gynaecology. The demographic variables of the tool were modified and used as per the expert's suggestions. **(Annexure III, IV, and VII)**

Reliability

Inter rater reliability test was done and the calculated value was r=1 which concluded that the tool was highly reliable.

Pilot study

The pilot study was conducted at Kottaram, Mission Compound area. The researcher obtained initial permission from the Principal to conduct the pilot study, then obtained permission from the Medical officer in Primary Health Centre. Six post menopausal women were selected, 3 in Study group I and other 3 in Study group II. Study group I received salt solution wash and Study group II received warm water wash. The level of selected symptom of leucorrhea was assessed on the first day and salt solution wash was given to Study group I and warm water wash was given to Study group II three times daily for 3 days. Post test was made after three days in Study group I and Study group II. Analysis of the data was done by using descriptive and inferential statistics. The tool and instrument were found feasible and practicable. No changes were made and researcher proceeded for the main study.

Data Collection Procedure

The researcher obtained initial permission from the community to proceed for data collection **(ANNEXURE I).** The selected setting for Study group I was Ganespuram and study group II was kottaram. The researcher approached the Primary Health Centres of both the groups and requested permission to conduct the study. Permission was granted by the Medical Officer for a period of one month (17-06-2013 to 17-07-2013) for both the groups (**ANNEXURE II).** The data collection

was started on 17-06-2013. The post menopausal women were selected under Study group I and Study group II by using Purposive sampling method. The postmenopausal women who were having leucorrhea was selected each day, (Table 3.1) shows the number of post menopausal women selected each day. For both Study groups the pre test was done on the first day by using Numerical itching assessment scale (**ANNEXURE VII).** The postmenopausal women who were under Study group I received salt solution wash which is made by adding two table spoons of salt to 500ml of water (approximately to 2 handfuls of common or table salt in 1/2 litre of water) at 45-50°C, then made warm up to 38°C as measured by using lotion thermometer and poured on the perineal area 3 times daily (ANNEXURE X). Similarly the Study group II received warm water wash that is made by one litre of water and boiled up to 45-50°C then made warm up to 38°C as measured by using lotion thermometer and poured on the perineal area 3 times daily (ANNEXURE X). After three days of intervention the post test was done for both the groups by using Numerical itching assessment scale. (**ANNEXURE VII)**

DATA COLLECTION PERIOD, NUMBER OF POST MENOPAUSAL WOMEN AND METHOD OF SAMPLE SELECTION

Table 3.1: Data collection period, number of post menopausal women and method of sample selection

S.No	Date	Number of post menopausal women		Method of sample selection
		Study group I	Study group II	
1	17-06-2013	3	-	Purposive sampling method
2	18-06-2013	1	1	
3	19-06-2013	1	3	
4	20-06-2013	1	2	
5	21-06-2013	3	-	
6	22-06-2013	-	2	
7	23-06-2013	2	2	
8	24-06-2013	3	1	
9	25-06-2013	1	3	
10	26-06-2013	3	-	
11	27-06-2013	-	3	
12	28-06-2013	2	1	
13	29-06-2013	1	2	
14	30-06-2013	2	2	
15	01-07-2013	1	1	
16	02-07-2013	2	1	
17	03-07-2013	2	1	
18	04-07-2013	1	1	
19	05-07-2013	-	2	
20	06-07-2013	1	1	
21	07-07-2013	-	1	

Plan for data analysis

Descriptive statistics

Frequency, percentage, mean and standard deviation were used for categorical data.

Inferential statistics

Paired ‘t’ test was used to compare the pre and post test scores of Study group I and Study group II. Independent ‘t’ test was used to compare the post test scores of Study group I and Study group II. Chi-Square test was used to associate the post test level of selected symptom of leucorrhea with the selected demographic variables. **(ANNEXURE IX)**

Protection of human rights

The proposed study was conducted after the approval of the Dissertation Committee of St.Xavier’s Catholic College of Nursing, Chunkankadai (**ANNEXURE I**). Permission was obtained from the Medical officer of Primary health centre at Vadiveeswarem and Kottaram **(ANNEXURE II).** Written consent was obtained from each postmenopausal women before starting the data collection. Assurance was given to the study subjects regarding the confidentiality of the data collected.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data collected among post menopausal women with leucorrhea. The data collected from the post menopausal women were tabulated, analyzed and presented in the tables and interpreted under the following sections based on the objectives and hypotheses of the study. This chapter is divided into three sections.

Section-A:

I. Distribution of postmenopausal women according to the selected demographic variables in Study group I and Study group II.

Section-B:

I. Distribution of postmenopausal women in Study group I and Study group II according to the level of selected symptom of leucorrhea in pre-test.
II. Distribution of postmenopausal women in Study group I and Study group II according to the level of selected symptom of leucorrhea in post-test.

Section-C:

Testing Hypotheses

I. Comparison of pre test and post test scores of salt solution and warm water wash on level of selected symptom of leucorrhea among postmenopausal women in Study group I and Study group II**.**
II. Comparison of post test scores of salt solution wash and warm water wash on level of selected symptom of leucorrhea among postmenopausal women in Study group I and Study group II.
III. Association between the post test level of selected symptom of leucorrhea among postmenopausal women in Study group I and Study group II with selected demographic variables.

SECTION-A

I- DISTRIBUTION OF POSTMENOPAUSAL WOMEN ACCORDING TO THE SELECTED DEMOGRAPHIC VARIABLES IN STUDY GROUP I AND STUDY GROUP II

Table 4.1: Frequency and distribution of postmenopausal women according to the selected demographic variables

N=60

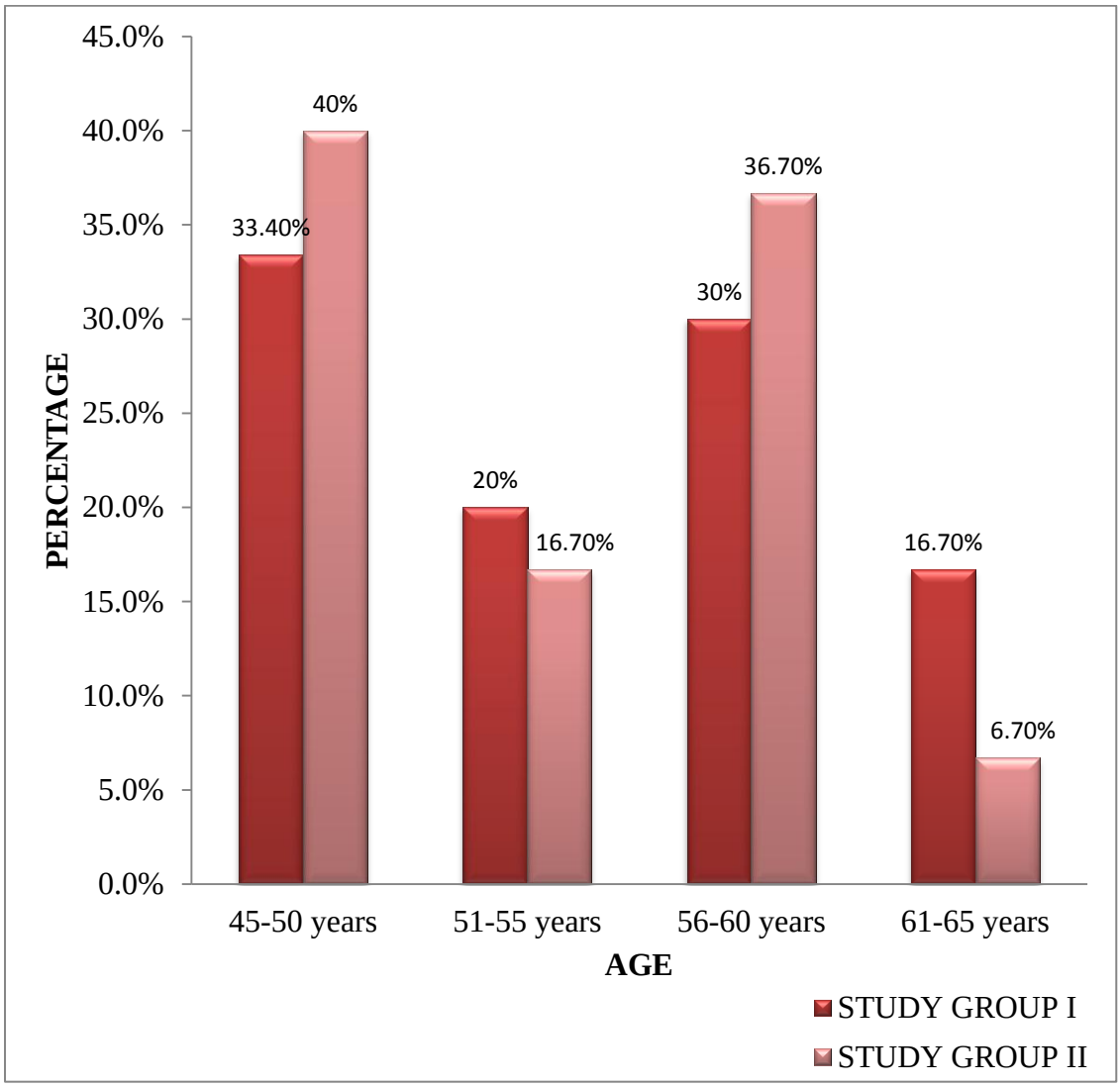
S.No	Demographic variables	Study group I (n=30)		Study group II (n=30)	
		f	%	f	%
1	**Age**				
	a) 45-50 years	10	33.4	12	40
	b) 51-55 years	6	20	5	16.66
	c) 56-60 years	9	30	11	36.7
	d) 61-65 years	5	16.7	2	6.7
2	**Education**				
	a) Primary education	7	23.4	9	30
	b) Secondary education	10	33.4	6	20
	c) Under graduate	2	6.7	10	33.4
	d) Post graduate	11	36.7	5	16.7
3	**Occupation**				
	a) Private	7	23.4	10	33.4
	b) Government	6	20	9	30
	c) Business	10	33.4	10	33.4
	d) Others	7	23.33	1	3.4
4	**Religion**				
	a) Hindu	8	26.7	9	30
	b) Christian	16	53.4	17	56.7
	c) Muslim	6	20	4	13.4
	d) Others	-	-	-	-

Table 4.1 shows that, distribution of post menopausal women according to the age depicts that in Study group I, 10 (33.4%) of them belonged to 45-50 years of age, 6 (20%) of them belonged to 51-55 years of age, 9 (30%) of them belonged to 56-60 years of age and 5 (16.7%) of them belonged to 61-65 years of age. In Study group II, 12 (40%) of them belonged to 45-50 years of age, 5 (16.7%) of them belonged to 51-55 years of age, 11 (36.7%) of them belonged to 56-60 years of age and 2 (6.7%) of them belonged to 61-65 years of age.

Dispersion of post menopausal women according to the education shows that in Study group I, 7 (23.4%) of them had primary education, 10 (33.4%) of them had secondary education, 2 (6.7%) of them were under graduate and 11 (36.7%) of them were post graduate. In Study group II, 9 (30%) of them had primary education, 6 (20%) of them had secondary education, 10 (33.4%) of them were under graduate and 5 (16.7%) of them were post graduate.

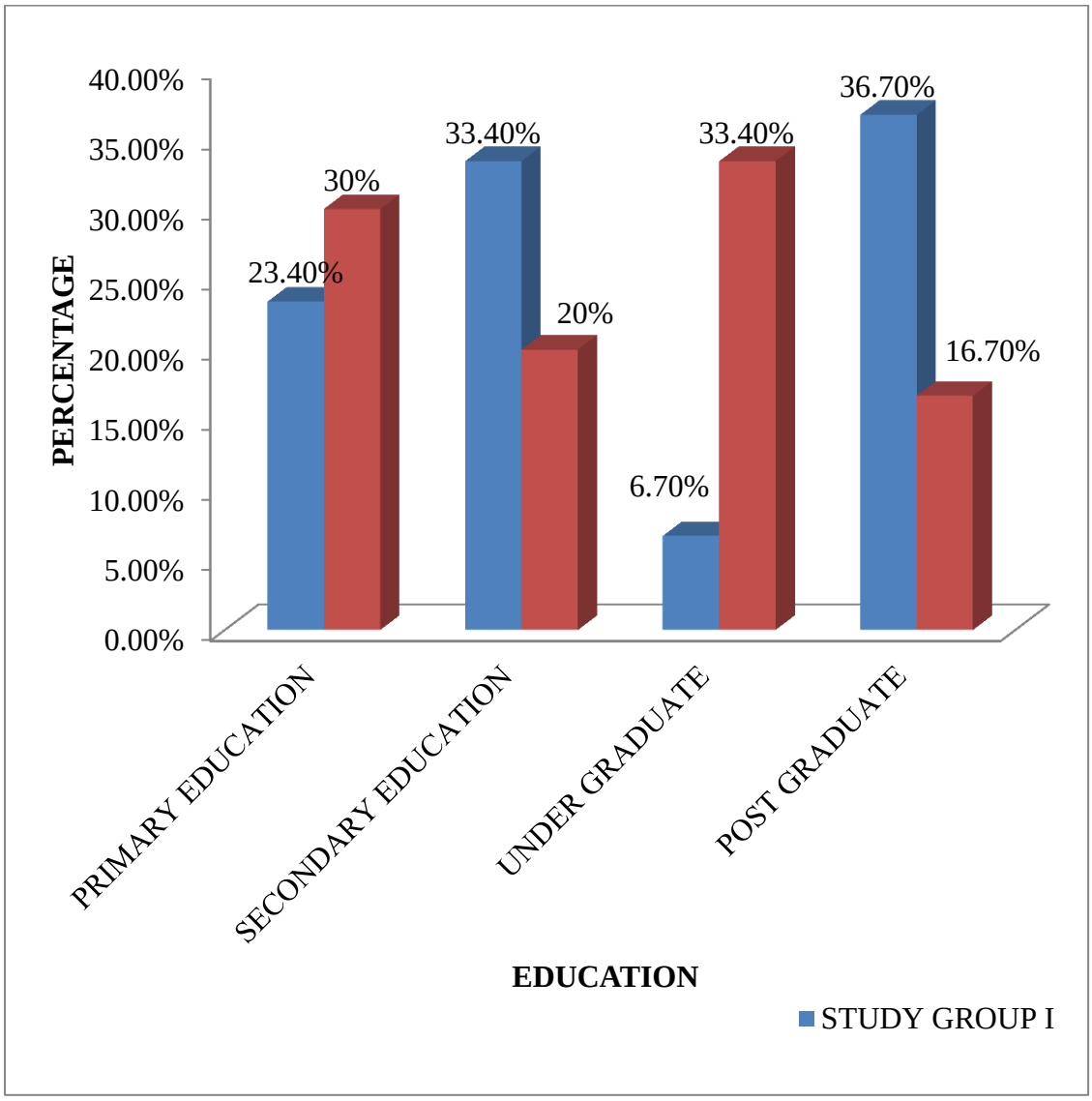
Dissipation of post menopausal women according to the occupation shows that in Study group I, 7 (23.4%) of them were private workers, 6 (20%) of them were government workers, 10 (33.4%) of them were doing business and 7 (23.4%) of them were other workers. In Study group II, 10 (33.4%) of them were private workers, 9 (30%) of them were government workers, 10 (33.4%) of them were doing business and 1 (3.4%) of them were other workers.

Allocation of post menopausal women according to the religion shows that in Study group I, 8(26.7%) of them were Hindus, 16 (53.4%) of them were Christians, and 6 (20%) of them were Muslims. In Study group II, 9 (30%) of them were Hindus, 17 (56.7%) of them were Christians, 4 (13.4%) of them were Muslims.



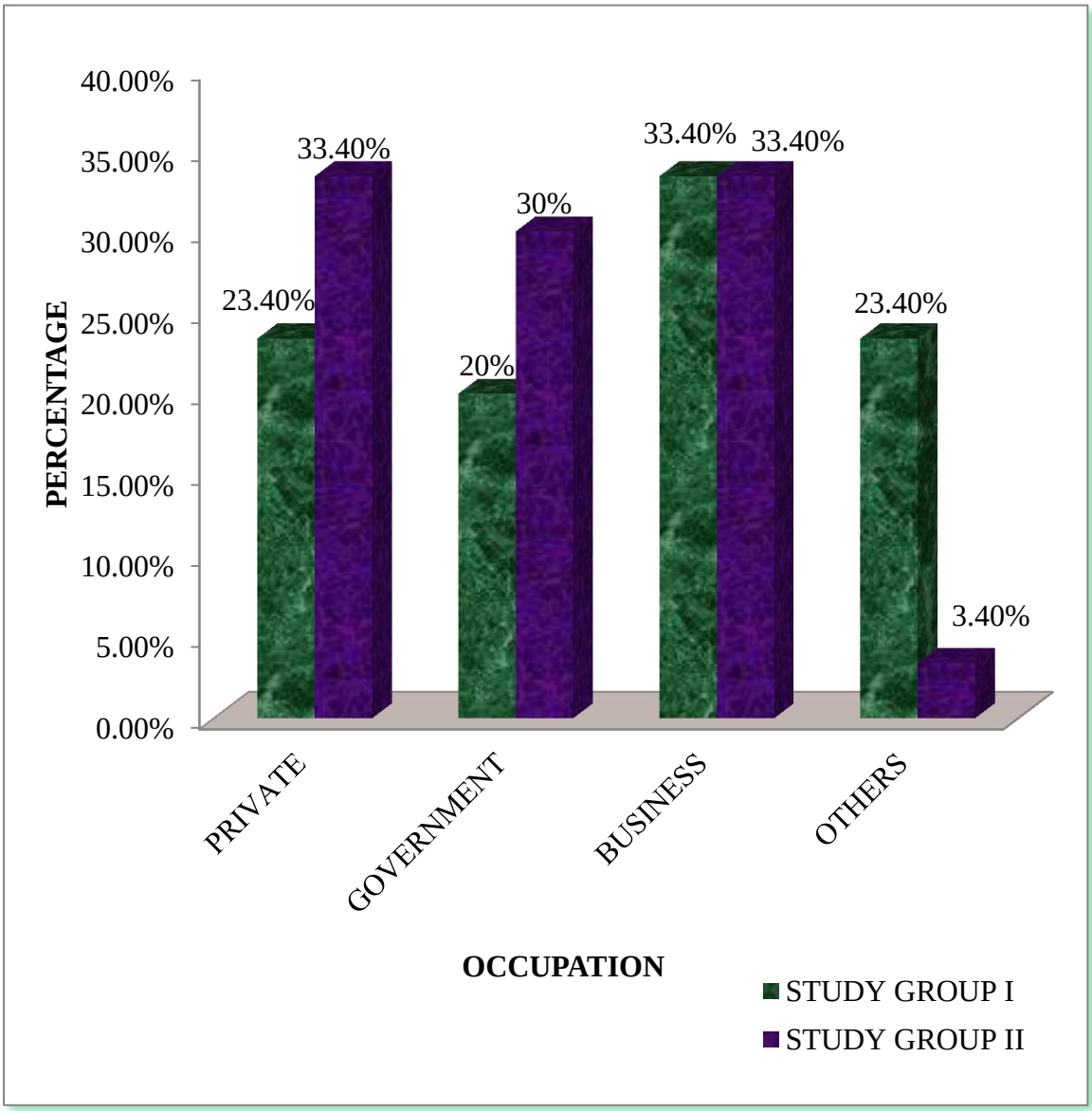
Distribution of postmenopausal women according to age

Figure 4.1



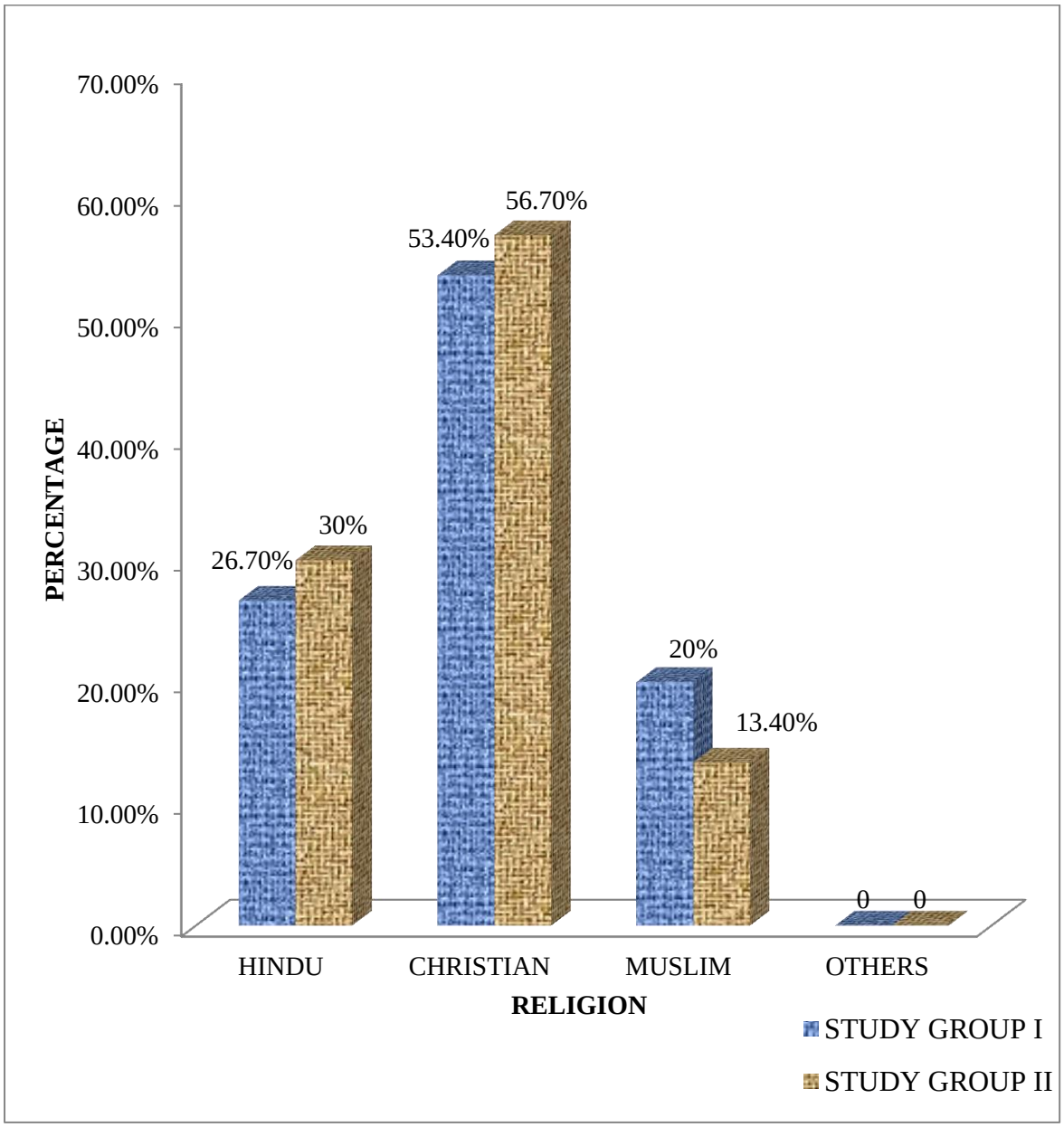
Dispersion of postmenopausal women according to education

Figure 4.2



Dissipation of postmenopausal women according to occupation

Figure 4.3



Allocation of postmenopausal women according to religion

Figure 4.4

SECTION-B

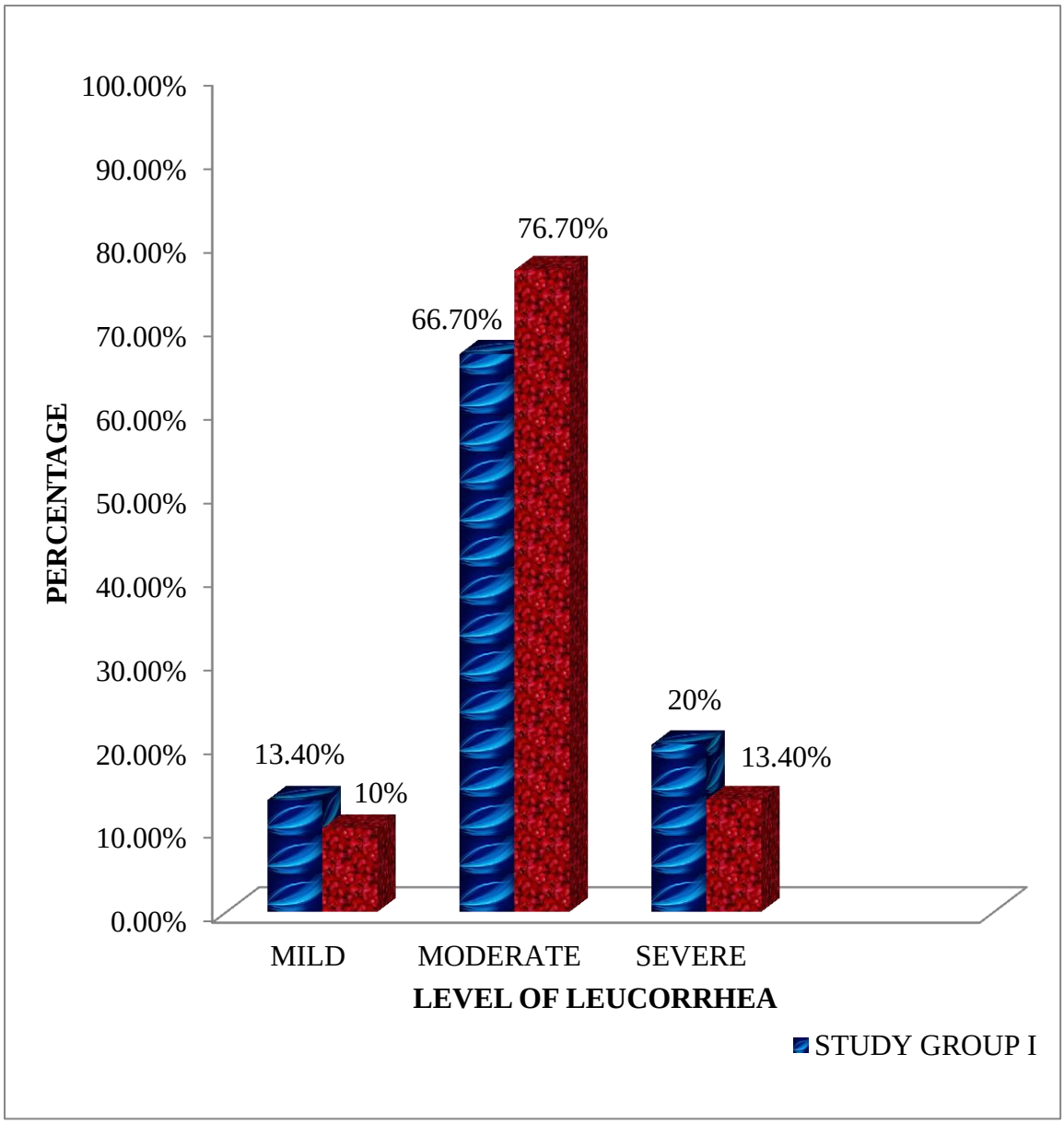
I- DISTRIBUTION OF POSTMENOPAUSAL WOMEN IN STUDY GROUP I AND STUDY GROUP II ACCORDING TO THE LEVEL OF SELECTED SYMPTOM OF LEUCORRHEA

Table 4.2: Frequency and percentage distribution of postmenopausal women according to the level of selected symptom of leucorrhea in Study group I and Study group II in pre test

N=60

S. No	Level of selected symptom of leucorrhea	Pre test			
		Study group I n=30		Study group II n=30	
		f	%	f	%
1.	Mild	4	13.4	3	10
2.	Moderate	20	66.7	23	76.7
3.	Severe	6	20	4	13.4

Table 4.2 shows that level of selected symptom of leucorrhea during pre test, in Study group I, 4 (13.4%) had mild, 20 (66.7%) had moderate and 6 (20%) had severe level of selected symptom of leucorrhea and in Study group II, 3 (10%) had mild, 23 (76.7%) had moderate and 4 (13.4%) had severe level of selected symptom of leucorrhea.



Scattering of postmenopausal women according to the level of selected symptom of leucorrhea in pre test

Figure 4.5

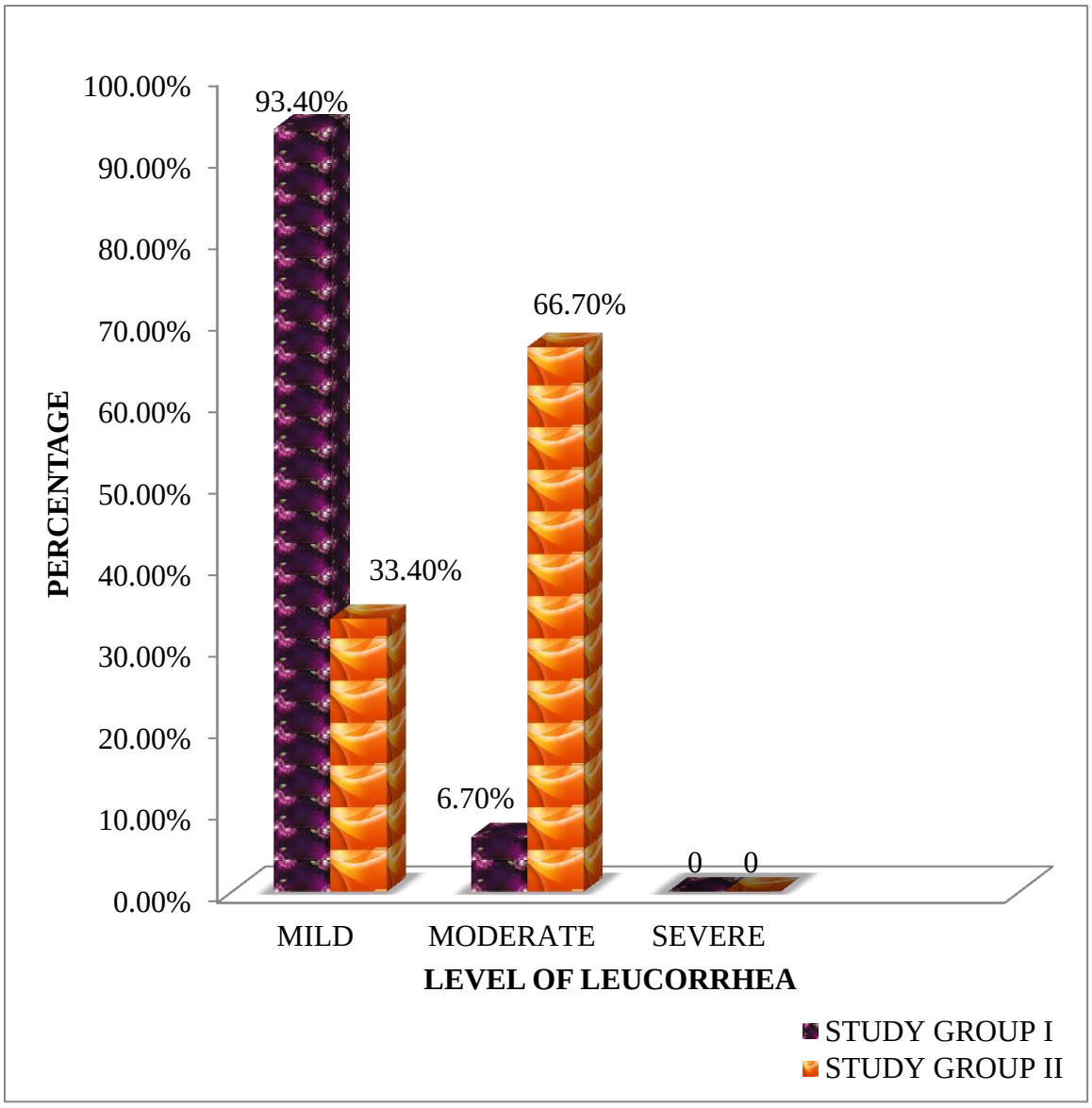
II- DISTRIBUTION OF POSTMENOPAUSAL WOMEN IN STUDY GROUP I AND STUDY GROUP II ACCORDING TO THE LEVEL OF SELECTED SYMPTOM OF LEUCORRHEA IN POST TEST

Table: 4.3 Frequency and percentage distribution of postmenopausal women according to the level of selected symptom of leucorrhea in Study group I and Study group II in post test

N=60

S. No	Level of selected symptom of leucorrhea	Post test			
		Study group I n=30		Study group II n=30	
		f	%	f	%
1.	Mild	28	93.4%	10	33.4%
2.	Moderate	2	6.7%	20	66.7%
3.	Severe	-	-	-	-

Table 4.3 shows that level of selected symptom of leucorrhea during post test, in Study group I, 28 (93.4 %) had mild, 2 (6.7 %) had moderate level of selected symptom of leucorrhea and in Study group II, 10 (33.4%) had mild, 20 (66.7%) had moderate level of selected symptom of leucorrhea, and there is no severe level of selected symptom of leucorrhea in both the Study group I and II.



Distribution of postmenopausal women according to the level of selected symptom of leucorrhea in post test

Figure 4.6

SECTION C

I- COMPARISON OF PRE TEST AND POST TEST SCORES OF LEVEL OF SELECTED SYMPTOM OF LEUCORRHEA AMONG POSTMENOPAUSAL WOMEN IN STUDY GROUP I AND STUDY GROUP II

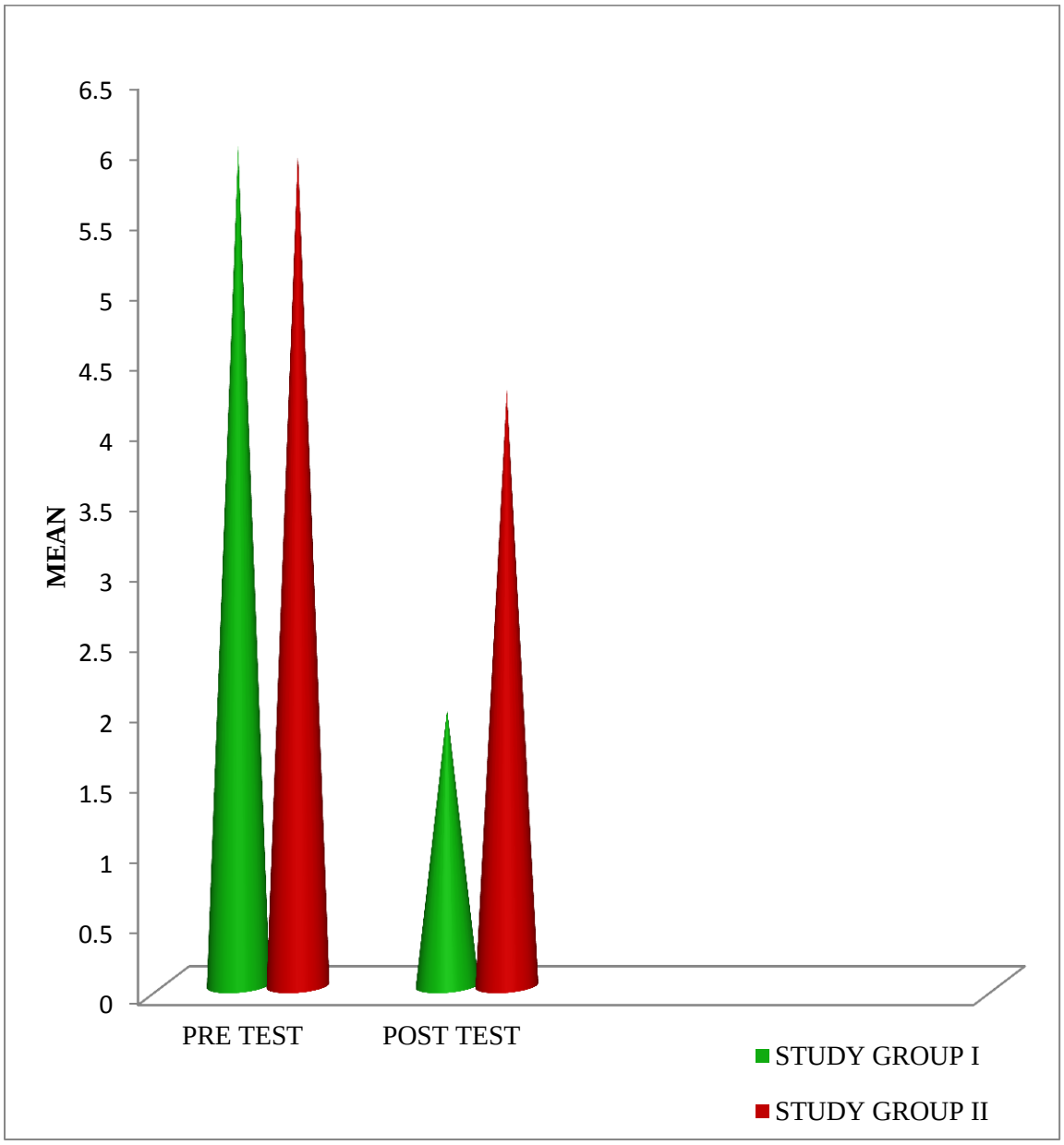
Table: 4.4: Mean, standard deviation and 't' value of pre test and post test scores of level of selected symptom of leucorrhea among postmenopausal women in Study group I and Study group II.

N=60

S. No	Group	Mean		SD	't'	Table value
		Pre test	Post test			
1.	Study group I n=30	5.96	1.96	1.531	14.310	1.699
2.	Study group II n=30	5.93	4.23	0.431	1.2691	1.699

*(P<0.05) level of significance

Table 4.4 shows that in Study group I during pre test the mean value was 5.96 and standard deviation was 1.531, in post test the mean value was 1.96 and standard deviation was 1.531. In Study group II during pre test the mean value was 5.93 and standard deviation was 1.2691, in post test the mean value was 4.23 and standard deviation was 1.2691. In Study group I the 't' value between pre and post test score of level of selected symptom of leucorrhea was 14.310, and in Study group II the 't' value between pre and post test scores was 1.2691. In Study group I the calculated 't' value was greater than the table value and in Study group II the calculated 't' value was less than the table value. So there was significant difference between the pre and post test scores of salt solution wash and warm water wash on level of selected symptom of leucorrhea among postmenopausal women.



Comparison between pre test and post test level of selected symptom of leucorrhea in Study group I and Study group II

Figure 4.7

II- COMPARISON OF POST TEST SCORES OF LEVEL OF SELECTED SYMPTOM OF LEUCORRHEA AMONG POST MENOPAUSAL WOMEN IN STUDY GROUP I AND STUDY GROUP II.

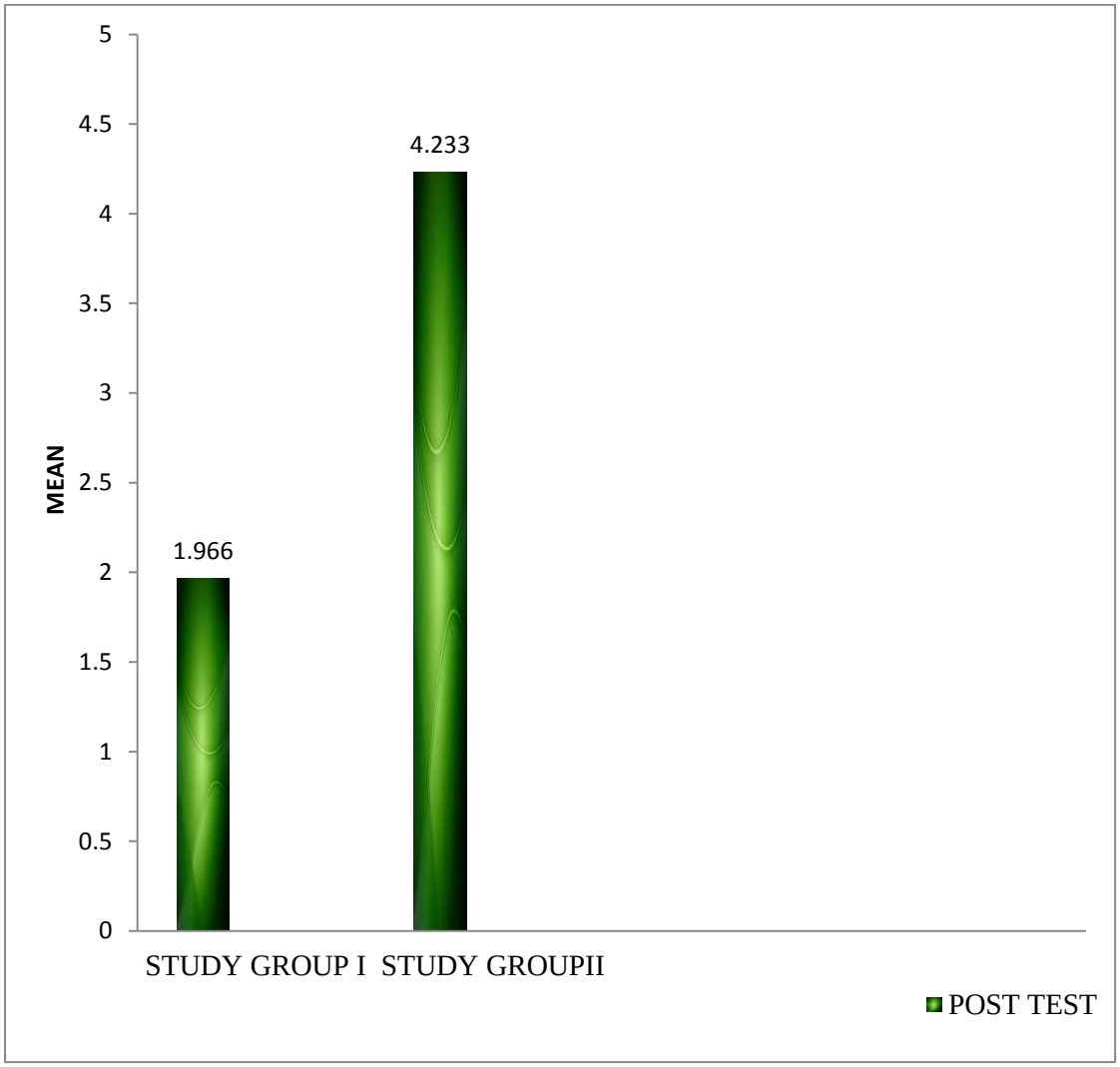
Table: 4.5: Mean, standard deviation and 't' value of post test scores in Study group I and Study group II

N=60

S. No	Group	Mean	SD	't'	Table value
1.	**Study group I n=30**	1.966	1.0159	7.8687	1.699
2.	**Study group II n=30**	4.233	1.4984		

*(P<0.05) level of significance

Table 4.5 shows that in Study group I the mean post test value was 1.96 and the standard deviation was 1.0159 and in Study group II the mean post test value was 4.23 and the standard deviation was 1.4984. The calculated 't' value was 7.8687. Since the 't' value was greater than the table value there was significant difference between the post test level of salt solution wash and warm water wash on selected symptom of leucorrhea among post menopausal women in Study group I and Study group II.



Comparison between the post tests level of selected symptom of leucorrhea in Study group I and Study group II

Figure 4.8

III- ASSOCIATION BETWEEN THE POST TEST LEVELS OF SELECTED SYMPTOM OF LEUCORRHEA AMONG POSTMENOPAUSAL WOMEN IN STUDY GROUP I AND STUDY GROUP II WITH SELECTED DEMOGRAPHIC VARIABLES.

Table 4.6: Association between the post test level of selected symptom of leucorrhea among post menopausal women in Study group I with selected demographic variables.

n=30

S. No	Demographic variables	df	Study group I Post test n=30						Chi-square	Table value
			Mild		Moderate		Severe			
			f	%	f	%	f	%		
1	**Age**									
	a)45-50 years	6	9	30	1	3.4	0	0		
	b)51-55 years	6	5	16.7	1	3.4	0	0	2.1443	12.59
	c)56-60 years	6	9	30	0	0	0	0		
	d)61-65 years	6	5	16.7	0	0	0	0		
2	**Education**									
	a)Primary education	6	5	16.7	2	6.7	0	0		
	b)Secondary education	6	10	33.4	0	0	0	0	2.0446	12.59
	c)Under graduate	6	2	6.7	0	0	0	0		
	d)Post graduate	6	11	36.7	0	0	0	0		
3	**Occupation**									
	a)Private	6	6	20	1	3.4	0	0		
	b)Government	6	6	20	0	0	0	0	1.786	12.59
	c)Business	6	9	30	1	3.4	0	0		
	d)Others	6	7	23.4	0	0	0	0		
4	**Religion**									
	a)Hindu	6	8	26.7	0	0	0	0		
	b)Christian	6	15	50	1	3.4	0	0	8.627	12.59
	c)Muslim	6	5	16.7	1	3.4	0	0		
	d)Others	6	0	0	0	0	0	0		

Table 4.6 shows that in Study group I, on considering the age, the chi-square value was 2.1443, the table value at degrees of freedom 6 was 12.59. As per their education the chi-square value was 2.0446, at degrees of freedom 6 the table value was 12.59. On considering the occupation the chi-square value was 1.786, at degrees of freedom 6 the table value was 12.59. As per the religion the chi-square value was 8.627, at degrees of freedom 6 the table value was 12.59. Since the chi-square value was lower than the table value there was no association between the level of selected symptom of leucorrhea and the selected demographic variables.

Table 4.7: Association between the post test level of selected symptom of leucorrhea among postmenopausal women in Study group II with selected demographic variables.

n=30

S.No	Demographic variables	df	Study group II Post test n=30						Chi-square	Table value
			Mild		Moderate		Severe			
			f	%	f	%	f	%		
1	**Age**									
	a)45-50 years	6	4	13.4	8	26.7	0	0		
	b)51-55 years	6	2	6.7	3	10	0	0	2.117	12.59
	c)56-60 years	6	2	6.7	8	26.7	1	3.4		
	d)61-65 years	6	1	3.4	1	3.4	0	0		
2	**Education**									
	a)Primary education	6	3	10	6	20	0	0		
	b)Secondary education	6	2	6.7	3	10	1	3.4	4.284	12.59
	c)Under graduate	6	3	13.4	7	23.4	0	0		
	d)Post graduate	6	2	6.7	3	10	0	0		
3	**Occupation**									
	a)Private	6	4	13.4	6	20	0	0		
	b)Government	6	4	13.4	5	16.7	0	0	6.655	12.59
	c)Business	6	1	3.4	8	26.7	1	3.4		
	d)Others	6	1	3.4	0	0	0	0		
4	**Religion**									
	a)Hindu	6	3	10	5	16.7	1	3.4		
	b)Christian	6	8	26.7	9	30	0	0	5.564	12.59
	c)Muslim	6	0	0	4	13.4	0	0		
	d)Others	6	0	0	0	0	0	0		

Table 4.7 shows that in Study group II, on considering the age, the chi-square value was 2.117, the table value at degrees of freedom 6 was 12.59. As per their education the chi-square value was 4.284, at degrees of freedom 6 the table value was 12.59. On considering occupation the chi-square value was 6.6557, at degrees of freedom 6 the table value was 12.59. As per the religion the chi-square value was 5.564, at degrees of freedom 6 the table value was 12.8. Since the chi-square value was lower than the table value there was no association between the level of selected symptom of leucorrhea and the selected demographic variables.

CHAPTER – V

DISCUSSION

This study has been done to compare the effectiveness of salt solution wash and warm water wash on selected symptom of leucorrhea among post menopausal women in selected communities in Kanyakumari District.

Demographic variables of the Postmenopausal women

The demographic variables in Study group I, 10 (33.4%) of them belonged to 45-50 years of age and 5 (16.7%) of them belonged to 61-65 years of age. As per their education 7(23.4%) of them had primary education and 11 (36.7%) of them were post graduate. According to their occupation 7 (23.4%) of them were private workers and 7 (23.4%) of them were other workers. Distribution of post menopausal women according to their religion 8 (26.7%) of them were Hindus and 6 (20%) of them were Muslims.

The demographic variable in Study group II, 12 (40%) of them belonged to 45-50 years of age and 2 (6.7%) of them belonged to 61-65 years of age. According to their education 9 (30%) of them had primary education and 5 (16.7%) of them were post graduate. According to their occupation 10 (33.4%) of them were private workers and 1 (3.4%) of them were other workers. Distribution of post menopausal women according to their religion 9 (30%) of them were Hindus and 4 (13.4%) of them were Muslims.

The first objective of the study is to assess and compare pre test and post test level of selected symptom of leucorrhea among post menopausal women in Study group I and Study group II.

During pre-test, in Study group I, all women 30 (100%) were under mild, moderate and severe level of selected symptom of leucorrhea. In Study group II also all 30 (100%) belonged to mild, moderate and severe level of selected symptom of leucorrhea.

During post test in Study group I, 93.4% of them had mild leucorrhea, 6.7% of them had moderate leucorrhea. In Study group II, 66.7% of them had moderate leucorrhea, 33.4% of them had mild leucorrhea.

The second objective of the study was to evaluate pre test and post test level of selected symptom of leucorrhea among post menopausal women in Study group I and Study group II

In Study group I the calculated 't' value for the pre test and post test level of selected symptom of leucorrhea was 14.31 which was higher than the corresponding table value at 5% significant level. So there was significant difference between the pre test and post test scores in Study group I.

Similarly in Study group II the calculated 't 'value for the pre test and post test level of selected symptom of leucorrhea was 1.26. The corresponding table value was less than the calculated value at 5% significant level. So there was significant difference between the pre test and post test scores in Study group II.

This result was supported by a study conducted by Meenakumari (2008) a experimental study conducted among 60 women of Omayalchi CHC Arrakkampakkam, in Chennai to assess the effectiveness of lukewarm water in the home management of abnormal vaginal discharge. The findings revealed that women in the Experimental group showed a highly significant decrease in the level of itching, burning sensation, abdominal pain, back ache following administration of luke warm water with clients in the Control group.

This study reveals that the use of warm water wash in abnormal vaginal discharge was effective. There is reduction in the level of itching, burning sensation, abdominal pain, back ache. This study statistically prove the effectiveness of warm water wash on abnormal vaginal discharge was effective. Hence, the second objective of the study was proved that there is improvement in the pre test level of selected symptom of leucorrhea after the use of warm water wash.

The third objective of the study is to compare the post test score of salt solution wash and warm water wash on selected symptom of leucorrhea among post menopausal women in Study group I and Study group II

In post test, mean score of level of selected symptom of leucorrhea among the Study group I was 1.96 and the mean score of the Study group II was 4.23. There was significant difference between the Study group I and Study group II which was computed through independent 't' test. (t=1.699). The score represents the effectiveness of salt solution wash. So the first hypotheses of the study was retained.

This result was supported by a study conducted by Mincy. M.L (2010) a experimental study in a hospital, Kerala was conducted to assess the effectiveness of salt solution wash for leucorrhea among 30 married women. The findings revealed that there was a significant reduction in leucorrhea after perineal wash with salt solution. t=34.47 ($p<0.01$) among married women in the Experimental group .

This study reveals that the use of salt solution wash is effective in reduction of leucorrhea among married women. It is useful for all age group women, so the researcher statistically prove the use of perineal wash with salt solution wash was effective. This study supports the use of salt solution wash and satisfies the third objective.

The fourth objective of the study is to find out the association between the post test levels of selected symptom of leucorrhea with the selected demographic variables.

There is no significant association ($p \leq 0.05$) between the level of selected symptom of leucorrhea among post menopausal women with the selected demographic variables in Study group I and Study group II.

There was significant difference between the post test level of selected symptom of leucorrhea in Study group I and Study group II computed through independent 't' test. (t=7.8687). The score shows that the effectiveness of salt water solution wash is more effective than the warm water wash at 5% significant level. Researcher concludes as per the study that the level of selected symptom of leucorrhea can be reduced by using salt water wash than warm water wash, which is cheap and best method. This study statistically proved the effectiveness of salt water wash was effective than warm water wash.

CONCEPTUAL FRAMEWORK

The researcher adopts Modified Imogene King's Goal Attainment Theory (1981) based on the personal & interpersonal systems including interaction, perception, judgement, communication and transaction.

The researcher adopted goal attainment as a basic theory for conceptual framework, which is aimed at effectiveness of salt solution wash and warm warm wash on level of selected symptom of leucorrhea. This involves interaction between the researcher and the post menopausal women.

The major elements of the theory of goal attainment are seen "in the interpersonal systems in which two people, who are usually strangers, come together in a health care organization to help and to be helped to maintain a state of health that permits functioning in roles." The concepts of the theory are as follows.

Six major concepts describe these phenomena

Perception

It refers to people representation of reality. Here the researcher and the post menopausal women perceived the need of salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea.

Judgment

Judgment is decision which is made. Here the researcher decides to provide salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea and post menopausal women who are living in Ganesapuram and Kottaram community decided to participate in the research study.

Action

This refers to the changes that have to be achieved. The researcher action is to provide salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea and post menopausal women decided to receive the salt solution wash and warm water wash.

Reaction

Reaction helps in setting a mutual goal. In this study the researcher and post menopausal women set a mutual goal. Here the mutual goal is reduction in level of selected symptom of leucorrhea.

Interaction

If refers to the verbal and non verbal communication between one individual or between two or more individual who involve goal directed perception. Here the researcher encourages the post menopausal women in the selected community to receive the salt solution wash and warm water wash to reduce the level of selected symptom of leucorrhea.

Transaction

This is the achievement of a goal. Here the researcher’s goal is achievement of reduction in the symptom of leucorrhea and evaluate the effectiveness of salt solution wash versus warm water wash by using Numerical itching assessment scale.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter consists of four sections. In the first two sections, the summary and conclusion are presented. In the last two sections, the implications for nursing practice and recommendations for further research are presented.

Summary

Quantitative approach with a Quasi Experimental research design was used to compare the effectiveness of salt water wash and warm water wash on selected symptom of leucorrhea among post menopausal women. The conceptual framework for the study was based on **Modified Imogene King's Goal Attainment Theory (1981)**. The first part of the tool was the structured questionnaire to collect the demographic variables. The standardized Numerical itching assessment scale was the second part used to assess the level of selected symptom of leucorrhea in pre and post test. Purposive sampling technique was used to select the post menopausal women and data were collected from 60 post menopausal women from Ganesapuram and Kottaram, Nagercoil, Kanyakumari District.

The data were collected and analyzed using descriptive and inferential statistics. To test the hypotheses, independent 't' test, paired 't' test and chi square test were used. The level of significance was assessed by $p < 0.05$ to test the hypotheses.

The Major Findings

The demographic variables in Study group I, 10 (33.4%) of them belonged to 45-50 years of age and 5 (16.7%) of them belonged to 61-65 years of age. As per their education 7(23.4%) of them had primary education and 11 (36.7%) of them were post graduates. According to their occupation 7 (23.4%) of them were private workers and 7 (23.4%) of them were other workers. Distribution of post menopausal women according to their religion 8 (26.7%) of them were Hindus and 6 (20%) of them were Muslims.

The demographic variable in Study group II, 12 (40%) of them belonged to 45-50 years of age and 2 (6.7%) of them belonged to 61-65 years of age. According to their education 9 (30%) of them had primary education and 5 (16.7%) of them were post graduate. According to their occupation 10 (33.4%) of them were private workers and 1 (3.4%) of them were other workers. Distribution of post menopausal women according to their religion 9 (30%) of them were Hindus and 4 (13.4%) of them were Muslims.

During pre test in both Study group I and Study group II 30 (100%) had symptom of leucorrhea. During post test, in Study group I, 28 (93.4 %) had mild leucorrhea, 2 (6.7 %) had moderate leucorrhea. In Study group II, 10 (33.4%) had mild leucorrhea, 20 (66.7%) had moderate leucorrhea.

In Study group I the pre test mean was 5.96, the post test mean was 1.96, the calculated 't' value was 14.310, so there was significant difference in the pre test and post test scores of levels of selected symptom of leucorrhea. Similarly in Study group II the pre test mean was 5.93, the post test mean was 4.23, the calculated 't' value was 1.2691, so there was significant difference in the pre test and post test scores of level of selected symptom of leucorrhea.

In post test, the mean score of level of selected symptom of leucorrhea of the Study group I was 1.966 and the mean score of the Study group II was 4.233. There was significant difference between the Study group I and Study group II computed through independent 't' test. (t=7.8687). The score shows that the effectiveness of salt solution wash is more effective than the warm water wash.

Conclusion

Meeting the needs of the women and family is one of the primary responsibilities of a midwife. After the menopausal period the women may have difficulties, such as arthritis, leucorrhea, muscle weakness etc. Due to leucorrhea the women may have lower abdominal, intense itching, burning micturation, irritability, tiredness etc. So the intense itching is essential one to be reduced. The itching can be reduced by using salt solution wash which is cheap and the best method and also the preparation of salt solution wash is very easy. The salt is available in all shops and

the availability of salt is very easy in all homes. Perineal wash with salt solution is cost effective when comparing to other antiseptic lotions. It may not cause any infection, itching and irritation. This study statistically proves the reduction of itching by salt solution wash at 5% significant level.

Implications in nursing

Nursing service

Salt solution wash is an effective procedure to leucorrhea. It will reduce the risk of developing infection on the perineal area because salt solution has antiseptic action. It enhances the blood supply to the perineal area by its vasodilatation action. The salt is easily available and acceptable product. As a midwife one can advise the post menopausal women to use salt solution for perineal wash and self perineal care instructions can be explained, so that it may be useful for their home practice.

Nursing education

Student nurses can be trained to assess the symptoms of leucorrhea by using various Numerical itching assessment scale. Encourage them to practice various interventions to clean the leucorrhea itching. Explanation should be given regarding the uses of salt solution wash on leucorrhea. The nursing students should be taught the importance of relieving itching and reducing leucorrhea. Nurse educators should orient the students towards various forms of interventions for leucorrhea and itching.

Nursing administration

The nurse administrator coordinates her activity along with the curative aspects of care among post menopausal women by participating, practising and supervising the perineal wash by using salt solution. Nursing administrator can organize in-service education program regarding the effectiveness of salt solution wash on leucorrhea for staff nurses. Hospitals and community centres should provide self perineal care guidelines.

Nursing research

Nursing research is to be done to find out the various innovative methods to reduce the level of selected symptom of leucorrhea among post menopausal women. The findings of the study would help to expand the scientific body of professional knowledge upon which further research can be conducted. Large scale study can be conducted on the same intervention.

Recommendations

- Similar study can be conducted as a comparative study between married women and post menopausal women in different settings.
- Similar study can be conducted as a comparative study between the regular hospital routine.
- A study can be conducted with large sample size to generalize the results of the study.
- The study can be carried out for a longer period of time.

Limitations

- The duration of intervention was limited to three days, so the complete reduction of itching was not observed.

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ANNEXURE I

LETTER SEEKIING PERMISSION TO CONDUCT THE STUDY IN GANESAPURAM

St. XAVIER'S CATHOLIC COLLEGE OF NURSING
Chunkankadai, Nagercoil,
Kanyakumari District,
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E-mail : xaviers_nursing@yahoo.com
reenaevancy@yahoo.com
Website : www.xaviersnsg.edu.in

Dr. A. REENA EVENCY, M.Sc. (N)., Ph.D.,
Principal

To

06-05-2013

The Medical Officer,
Primary Health Centre,
Nagercoil.

Respected Madam/ Sir,

Miss. Shirley Angel is a student of M.Sc., Nursing programme from the Clinical Speciality, Obstetrics and Gynecological Nursing in our college. She is conducting a study on **'An experimental study to evaluate the effectiveness of salt solution wash on leucorrhea among post-menopausal women in selected village, Kanyakumari district'.**

This is for the research project to be submitted to the Tamilnadu Dr. M.G.R Medical University in Partial fulfillment of university requirement for the award of M.Sc., Nursing Degree and will be beneficial in understanding and improving the health of the post-menopausal women.

As a part of her study she needs to observe the effect of salt solution wash on leucorrhea among post-menopausal women. So permission may kindly be granted for her to conduct the study at your Municipality. She will abide by the rules and regulations of your Municipality.

Thanking you,

Yours faithfully,

PRINCIPAL
ST. XAVIER'S CATHOLIC COLLEGE OF NURSING
CHUNKANKADAI
NAGERCOIL - 629 003
K. K. DIST.

LETTER SEEKIING PERMISSION TO CONDUCT THE STUDY IN KOTTARAM

St. XAVIER'S CATHOLIC COLLEGE OF NURSING
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reenaevancy@yahoo.com
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Dr. A. REENA EVENCY, M.Sc. (N)., Ph.D.,
Principal

06-05-2013

To

The Medical Officer,
Primary Health Centre,
Kottaram.

Respected Madam/ Sir,

Miss. Shirley Angel is a student of M.Sc., Nursing programme from the Clinical Speciality, Obstetrics and Gynecological Nursing in our college. She is conducting a study on **'An experimental study to evaluate the effectiveness of salt solution wash on leucorrhea among post-menopausal women in selected village, Kanyakumari district'.**

This is for the research project to be submitted to the Tamilnadu Dr. M.G.R Medical University in Partial fulfillment of university requirement for the award of M.Sc., Nursing Degree and will be beneficial in understanding and improving the health of the post-menopausal women.

As a part of her study she needs to observe the effect of salt solution wash on leucorrhea among post-menopausal women. So permission may kindly be granted for her to conduct the study at your Municipality. She will abide by the rules and regulations of your Municipality.

Thanking you,

Yours faithfully,

PRINCIPAL
ST. XAVIER'S CATHOLIC COLLEGE OF NURSING
CHUNKANKADAI
NAGERCOIL - 629 003
K. K. DIST.

ANNEXURE II

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

To

The Principal

St. Xavier's Catholic College Of Nursing,

Chunkankadai,

Nagercoil- 629 003

Kanyakumari Dist.

Respected Madam,

Sub: Approved Permission to Undergo Research Project-Regarding

We are gald to inform that we approved permission to your college Nursing Student Ms. J. Shirley Angel, M.Sc. Nursing to undergo Research project on "A Quasi Experimental study to compare the effectiveness of salt solution wash versus warm water wash on selected symptom of Leucorrhea among post menopausal women" in our Ganesapuram Community from 17-06-2013 to 17-07-2013.

Thanking you

Yours truly

PERMISSION LETTER

To

The Principal

St. Xavier's Catholic College Of Nursing,

Chunkankadai,

Nagercoil- 629 003

Kanyakumari Dist.

Respected Madam,

Sub:Approved Permission to Undergo Research Project-Regarding

We are gald to inform that we approved permission to your college Nursing Student Ms. J. Shirley Angel, M.Sc. Nursing to undergo Research project on "A Quasi Experimental study to compare the effectiveness of salt solution wash versus warm water wash on selected symptom of Leucorrhea among post menopausal women" in our Kottaram Community from 17-06-2013 to 17-07-2013.

Thanking you

Yours truly

ANNEXURE III

LETTER SEEKING EXPERTS OPINION FOR THE VALIDITY OF THE TOOL

From

J.Shirley Angel

M.Sc., Nursing II year,

St. Xavier's Catholic college Of Nursing,

Chunkankadai.

To

Dr. F. Caroline Felicia Mary. M.D. DGO.

Caroline Hospital,

Nagercoil.

Respected Sir/ Madam,

Sub: Requisition to expert opinion and suggestion for the content validity.

I Shirley Angel, M.Sc., Nursing II year student of St.Xavier's Catholic College Of Nursing, Chunkankadai, have selected the following topic**, "**A Quasi Experimental study to compare the effectiveness of salt solution wash versus warm water wash on selected symptoms of Leucorrhea among post menopausal women in selected community, Kanyakumari district " for my dissertation to be submitted to Tamilnadu Dr. M.G.R. Medical University for the partial fulfilment of the requirement for award of Master of science in Nursing.

I request you to go through the items and give your valuable suggestions and opinions to develop the content validity of the tool. Kindly suggest modifications, addition and deletions if any in the remarks column.

Thanking You,

Place: Chunkankadai. **Yours sincerely,**

Date: 07. 05. 2013. **Shirley Angel J**

ENCLOSURE:

1. Problem statement, objectives, and hypotheses of the study
2. Demographic variables
3. Numerical itching assessment scale, Symptom checklist
4. Evaluation proforma.

CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL

INSTRUCTION:

Kindly review the demographic variable to assess the level of selected symptom of leucorrhea. Kindly give your suggestions regarding the accuracy, relevance and appropriateness of the content. Kindly place a tick mark (✓) against specific columns.

Validation of Demographic variables.

Item	Very relevant	Relevant	Need for modification	Not relevant	Remarks
1.					
2.					
3.					
4.					

Validation of Numerical Itching Assessment Scale

Item	Very relevant	Relevant	Need for modification	Not relevant	Remarks
1.					
2.					
3.					
4.					
5.					

ANNEXURE IV

EVALUATION CRITERIA CHECKLIST FOR VALIDATION

INSTRUCTIONS:

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly please tick mark in the appropriate columns and give remarks.

Interpretation column:

Column I – meets the criteria.

Column II - Partially meets the criteria.

Column III – does not meet the criteria.

S.NO	CRITERIA	1	2	3	REMARKS
1.	Scoring -adequacy. -clarity -simplicity				
2.	Content -logical sequence. -adequacy. -relevance.				
3.	Language -appropriate. -clarity. -simplicity.				
4.	Practicability -easy to score. -precise. -utility.				

Signature: **Any other suggestion:**

Name:

Designation:

Address:

ANNEXURE V

LIST OF EXPERTS VALIDATED THE TOOL

1. Dr. F. Caroline Felicia Mary. M.D. DGO.
   Director and Consultant,
   Caroline John Hospital,
   Asaripallam Road,
   Nesamony Nager
   Nagercoil.

2. Dr. Rosita, MD. DGO,
   Obstetrician and Gynecologist
   Government Medical College,
   Asaripallam.

3. Dr. Judie, M.Sc.(N) Ph. D., (N),
   Dean,
   SRM College of Nursing,
   Chennai.

4. Mrs. S. Suguna, M.Sc.(N),
   Reader,
   Nehru College of Nursing,
   Vallioor.

5. Mrs. Margret, M.Sc., (N)
   Reader,
   Annammal College of Nursing,
   Kuzhithurai.

ANNEXURE VI

CERTIFICATE OF EDITING

M. SAVARJAPPAN .M.A, B.Ed.
Rtd P.G. Assistant ENGLISH

ARULAGAM,
547, VALANAR STREET,
PUNNAI NAGAR.
NAGERCOIL-629004.
KANYAKUMARI DISTRICT.

Date:13/01/2014

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled **"An experimental study to evaluate the effectiveness of salt solution wash on symptoms of leucorrhea among postmenopausal women in selected community, Nagercoil"** by **Miss. Shirley Angel** has been checked for accuracy and correctness of English usage and that the language used in presenting the paper is lucid, unambiguous, free of grammatical or spelling errors and apt for the purpose.

M. Savariappan
M. SAVARIAPPAN, M.A., B.Ed.,
Rtd. P.G. Asst. (English).
13.1.14

ANNEXURE VII

TOOL FOR DATA COLLECTION

PART I: STRUCTURED QUESTIONNAIRE TO COLLECT DEMOGRAPHIC VARIABLES

1)THE AGE LIMIT OF WOMEN

a)45-50yrs

b)50-55yrs

c)55-60yrs

d)60-65yrs and above

2)THE EDUCATION OF WOMEN

a)1°Education

b)2°Education

c)Graduate

d)Post-Graduate and above

3)THE OCCUPATION OF WOMEN

a)Private

b)Government

c)Bussiness

d)Others

4)THE RELIGION OF WOMEN

a)Hindu

b)Christian

c)Muslim

d)Others

CLINICAL VARIABLE

1.DO YOU CLEAN THE GENITAL AREA AFTER EACH VOIDING?

a) Yes

b) No

2.DO YOU REMOVE HAIR IN THE GENITAL AREA ON EACH MONTH?

a) Yes

b) No

SYMPTOMS CHECKLIST

S.NO	SYMPTOMS OF LEUCORRHEA	YES	NO
1.	LOWER ABDOMINAL PAIN		
2.	PAINFUL SEXUAL ACT		
3.	BACKACHE AND PAIN IN THE LEG,ESPECIALLY THIGH AND CALF MUSCLES		
4.	INTENSE ITCHING WITH ODEMA OF VAGINA		
5.	SORENESS AND BURNING IN THE GENITAL TRACT		
6.	BURNING URINATION AND FREQUENT URGE TO PASS VERY LITTLE URINE		
7.	IRRITABILITY AND LACK OF CONCENTRATION IN WORK DUE TO CONSCIOUSNESS OF DISCHARGES		
8.	DIGESTIVE DISTURBANCES LIKE CONSTIPATION OR DIARRHOEA OR VOMITTING		
9.	GENERAL TIREDNESS DUE TO LOSS OF VITAL FLUIDS AS DISCHARGES		

KEY:

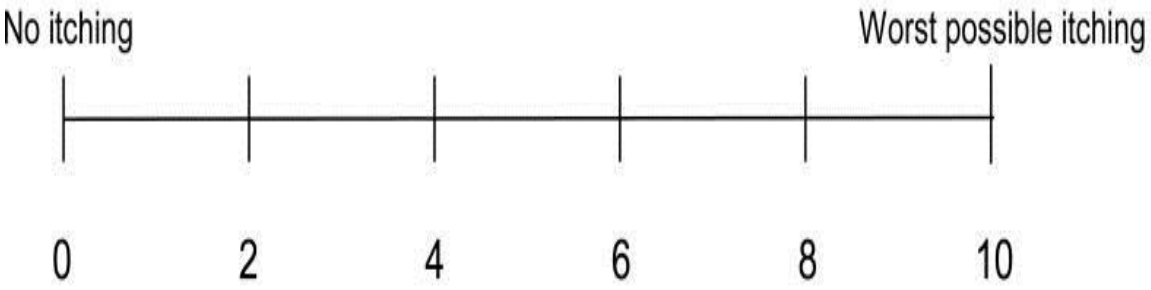
0-3-MILD

4-7-MODERATE

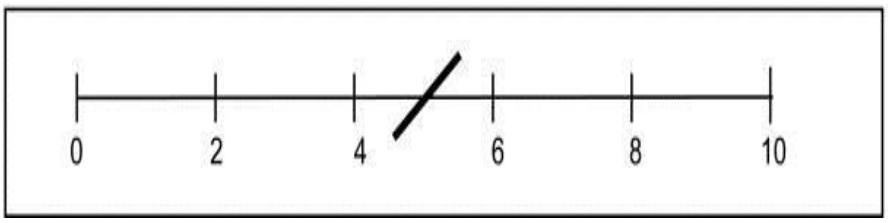
7-9-SEVERE

NUMERICAL ITCHING ASSESSMENT SCALE

Draw a line anywhere on the scale that best represents the severity of your itching:



Example:



KEY:

0-3-MILD

4-7-MODERATE

7-10-SEVERE

கரு விளக்கம்

பகுதி 1:

மக்கள் தொகை தரவு:

1) பெண்களின் வயது

அ)45-50 வயது

ஆ)51-55 வயது

இ)56-60 வயது

ஈ)61-65 வயது மற்றும் மேலே

2) பெண்களின் கல்வி

அ)முதன்மை கல்வி

ஆ)இரண்டாம் நிலை கல்வி

இ)பல்கலை கழக பட்டம்

ஈ)முதுகலை பட்டதாரி

3) பெண்களின் வேலை

அ)தனிப்பட்ட வேலை

ஆ)அரசாங்க வேலை

இ)தொழில்

ஈ)மற்றவர்கள்

4) பெண்களின் மதம்

அ)இந்து மதம்

ஆ)கிறிஸ்தவ மதம்

இ)முஸ்லீம் மதம்

ஈ)மற்றவர்கள்

மருத்துவ மாதிரிகள்

1)நீங்கள் ஒவ்வொரு முறையும் சிறுநீர் கழித்த பின்பு பிறப்புறுப்பு பகுதியை சுத்தம் செய்வீர்களா?

அ)ஆம்

ஆ)இல்லை

2) நீங்கள் ஒவ்வொரு மாதமும் பிறப்புறுப்பு பகுதியில் இருக்கும் முடியை நீக்குவிர்களா?

அ)ஆம்

ஆ)இல்லை

அறிகுறிகள் சரிபார்ப்பு பட்டியல்

வ.எண்	வெள்ளைப்படுதல் அறிகுறிகள்	ஆம்	இல்லை
1.	அடிவயிற்று வலி		
2.	உடல் உறவு செய்யும் போது வலி ஏற்படுதல்		
3.	முதுகு வலி மற்றும் கால் வலி ஏற்படுதல் குறிப்பாக தொடை மற்றும் காலின் அடி பகுதியில் வலி ஏற்படுதல்		
4.	பிறப்பு உறுப்பில் வீக்கம் மற்றும் தீவிர அரிப்பு ஏற்படுதல்		
5.	இனப்பெருக்க பாதையில் எரிச்சல் மற்றும் வேதனை ஏற்படுதல்		
6.	சிறுநீர் கழிக்கும் போது எரிச்சல் மற்றும் சிறிய அளவில் சிறுநீர் கழிக்க துண்டுதல்		
7.	வெள்ளைப்படுதலின் உணர்வால் வேலை செய்யும் இடங்களில் எரிச்சல் அடைதல்,கவன குறைவு எற்படுதல்		
8.	மலச்சிக்கல்,வயிற்றுப்போக்கு,வாந்தி போன்ற செரிமான தொந்தரவுகள் எற்படுதல்		
9.	உடலில் இருந்து முக்கிய திரவங்கள் வெளியேற்றதால் போதுவான சோர்வு எற்படுதல்		

குறிப்பு:

0-3-குறைவான

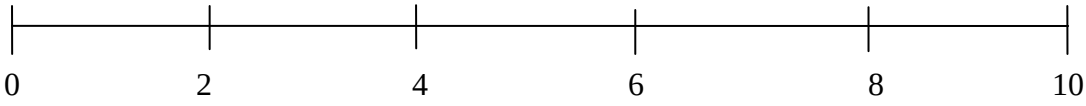
4-7-மிதமான

7-9-கடுமையான

அரிப்பை மதிப்பிடும் அளவு கோல்

உங்களின் அரிப்பு தீவிரத்தை பிரதிபலிங்கும் விதமாக அளவு கோலில் எங்காவது ஒரு வரி வரைக.

அரிப்பு இல்லை அரிப்பு மோசமான



குறிப்பு:

0-3-குறைவான

4-7-மிதமான

7-10-கடுமையான

ANNEXURE VIII

CERTIFICATE OF STATISTICAL ANALYSIS

TO WHOM SO EVER IT MAY CONCERN

Certified that the dissertation paper titled " **A Quasi Experimental study to compare the effectiveness of salt solution wash versus warm water wash on selected symptom of Leucorrhea among post menopausal women in selected community, Kanyakumari district"** by **Ms. SHIRLEY ANGEL. J,** has been checked for the accuracy in statistical analysis and interpretation and apt for its purpose.

ANNEXURE IX

FORMULAS USED FOR DATA ANALYSIS

DESCRIPTIVE STATISTICS

Mean

$$\overline{X} = \frac{\sum X}{N}$$

Standard deviation

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

INFERENTIAL STATISTICS

Paired‘t’ test

$$t = \frac{\bar{d}}{\sqrt{s^2 / n}}$$

Independent 't' test

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{{s_1}^2}{n_1} + \frac{{s_2}^2}{n_2}}}$$

Chi-Square test

$$\chi^2 = \Sigma \frac{(o - e)^2}{e}$$

ANNEXURE X

PHOTOGRAPHY OF SALT SOLUTION WASH AND WARM WATER WASH

SALT SOLUTION WASH

WARM WATER WASH